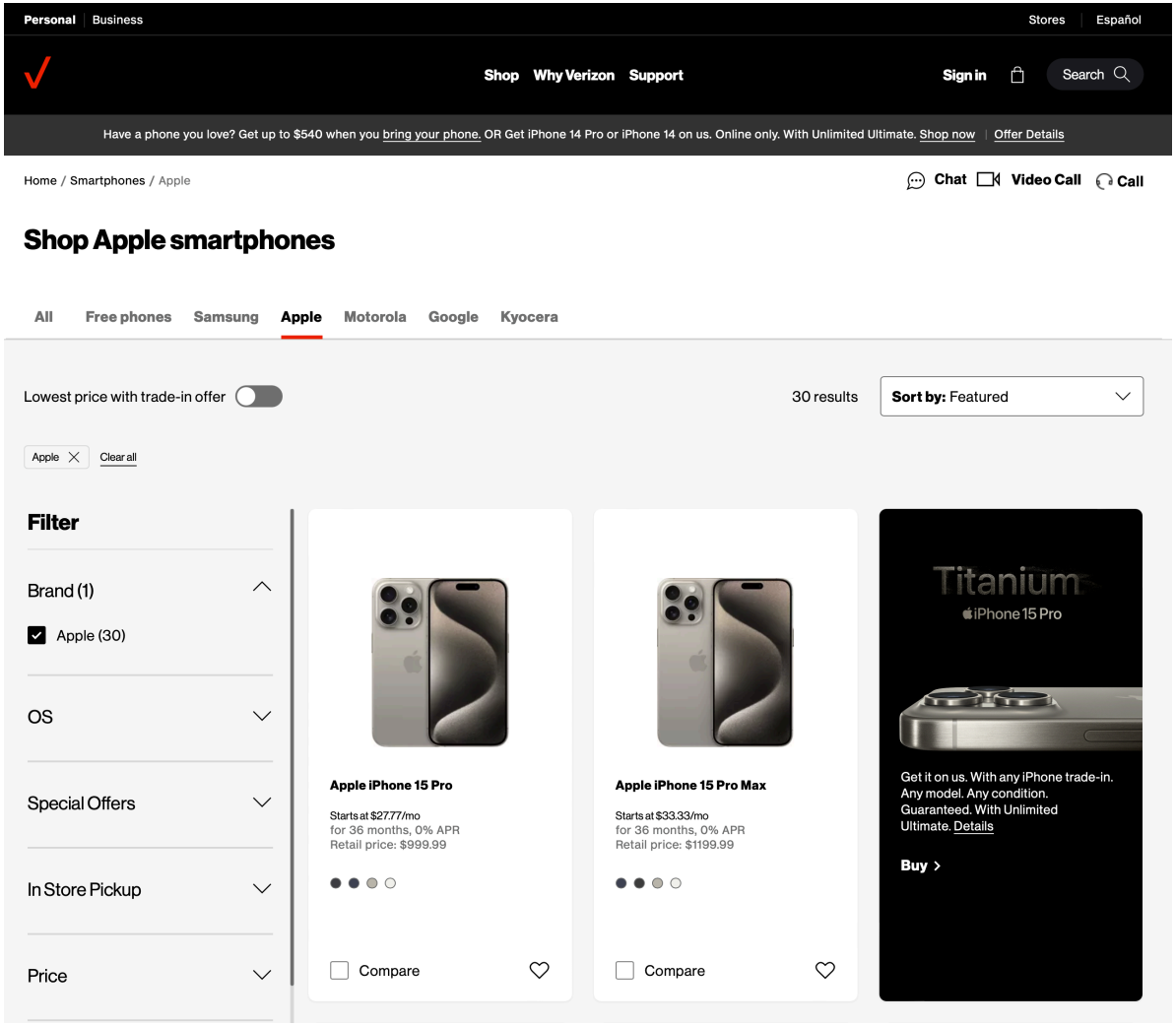
Exhibit H

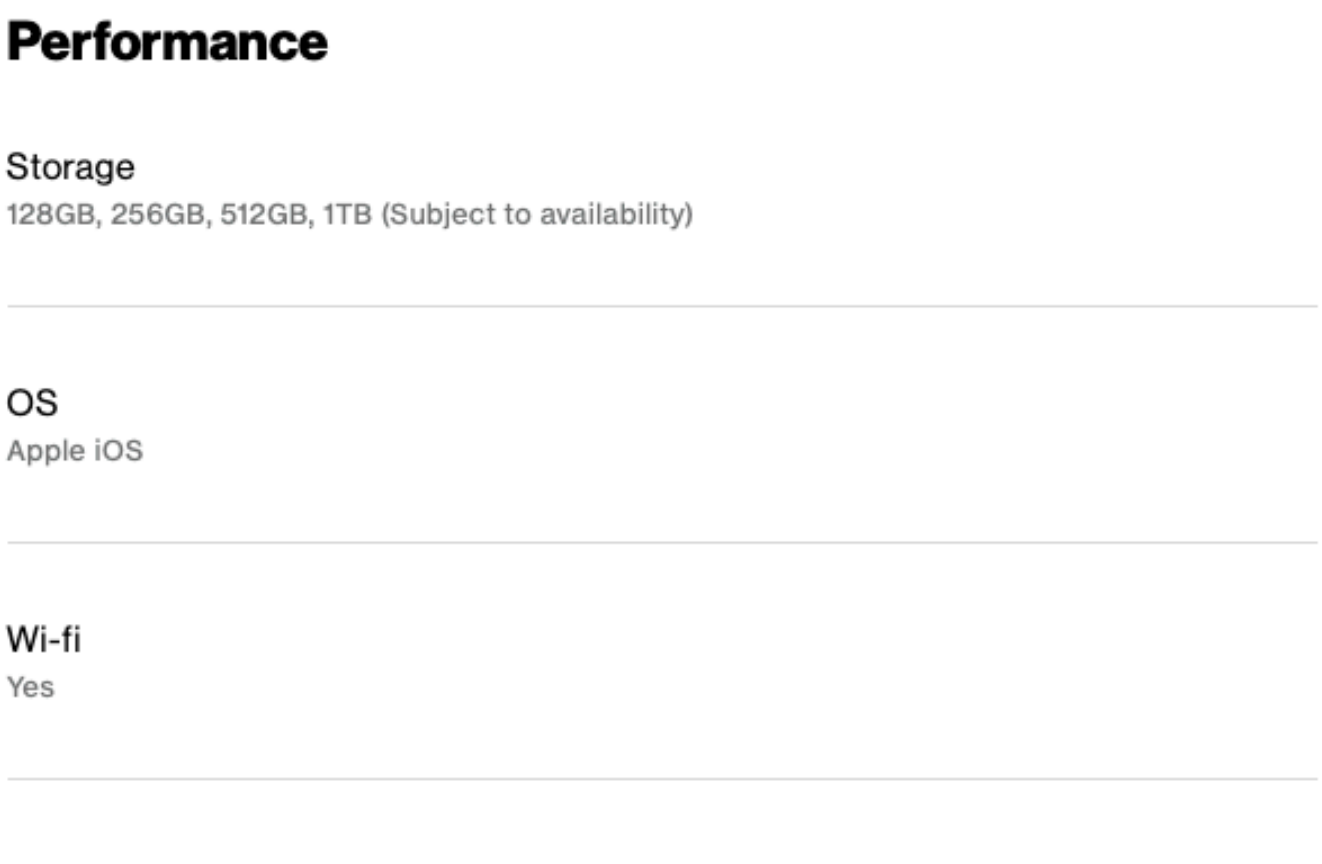
Exhibit H - U.S. Patent No. 9,215,613 ("'613 Patent")

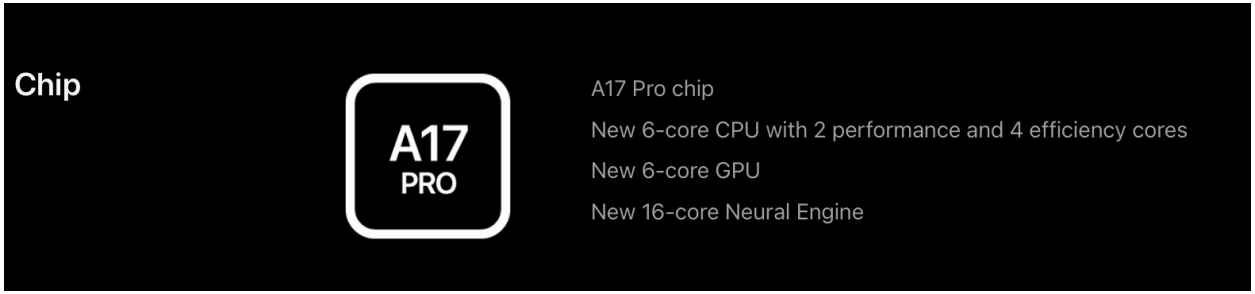
Accused Instrumentalities: smartphones, basic phones, tablets, laptops, and hotspot devices sold (including those sold in bundles with data plans) or used by Verizon and all versions and variations thereof ("Accused Instrumentalities") since the issuance of U.S. Pat. No. 9,215,613 (the "Asserted Patent").

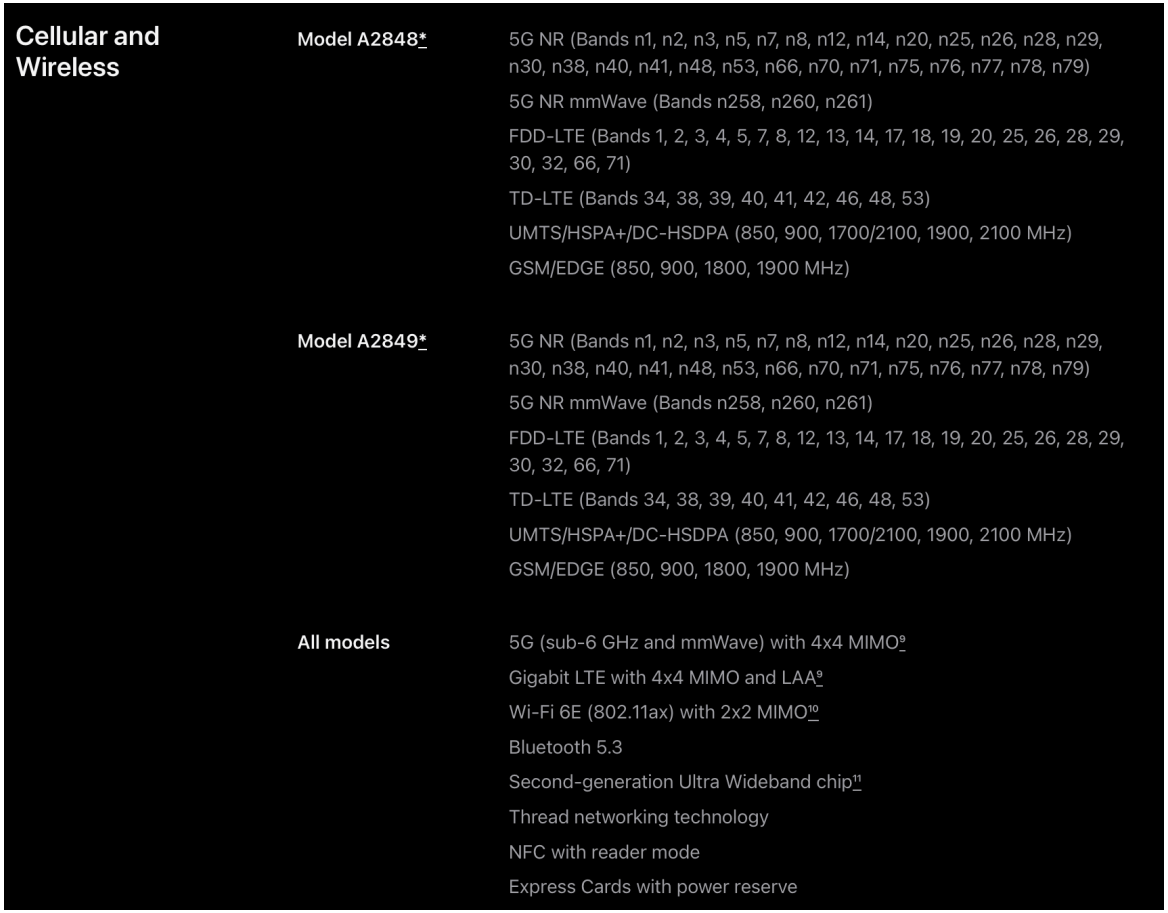
Claim 1

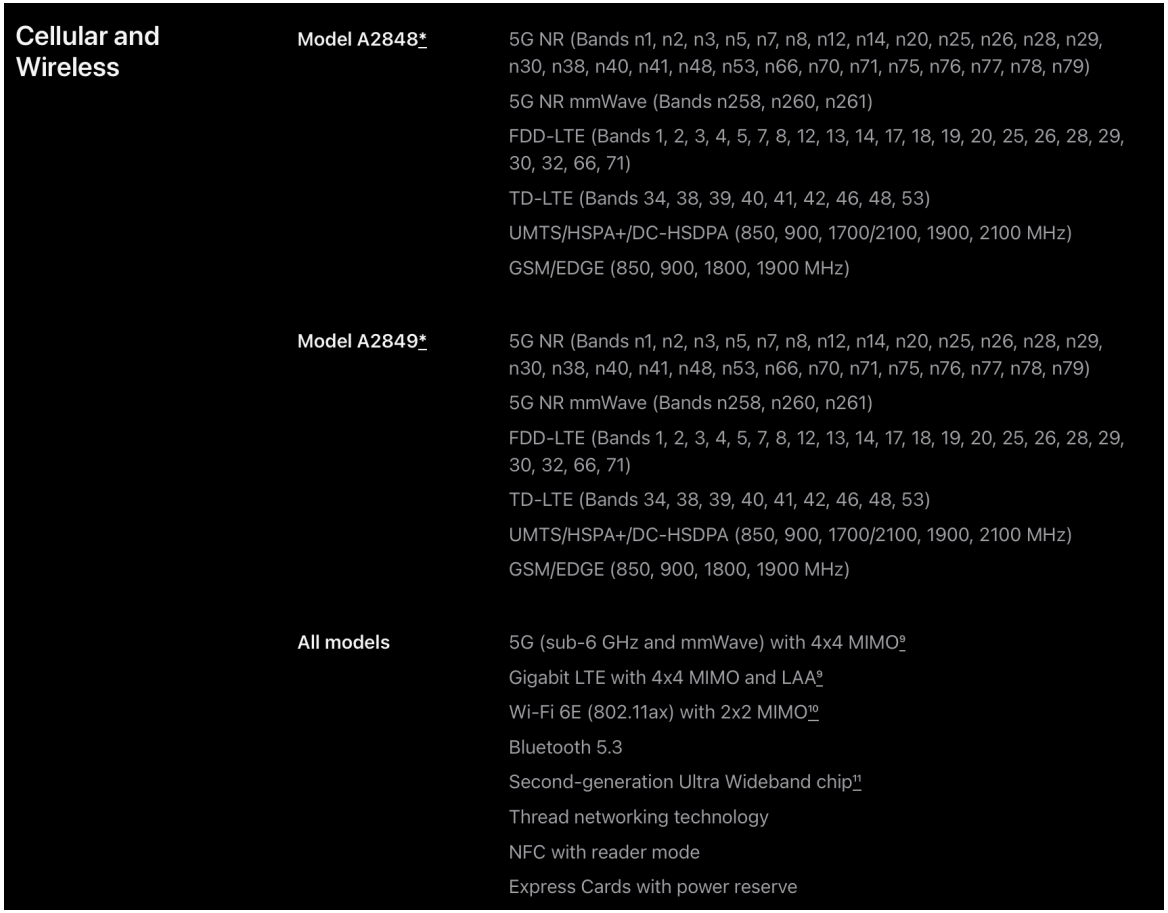
Claim	Public Documentation
[1pre] A wireless end-user device, comprising:	The Accused Instrumentalities include "A wireless end-user device, comprising." For example, Verizon sells and uses devices described by Verizon's website below (e.g., devices made by Samsung, Apple, Motorola, Google, and Kyocera). These devices constitute a wireless end-user device as described in claim 1. *See, e.g.*: https://www.verizon.com/shop/online/5g-cell-phones/apple/:

Claim	Public Documentation
	 As a specific example, Apple's devices, including the Apple iPhone 15 Pro, are wireless end-user devices which run the Apple iOS Operating System. *See, e.g.*, https://www.verizon.com/smartphones/apple-iphone-15-pro/:

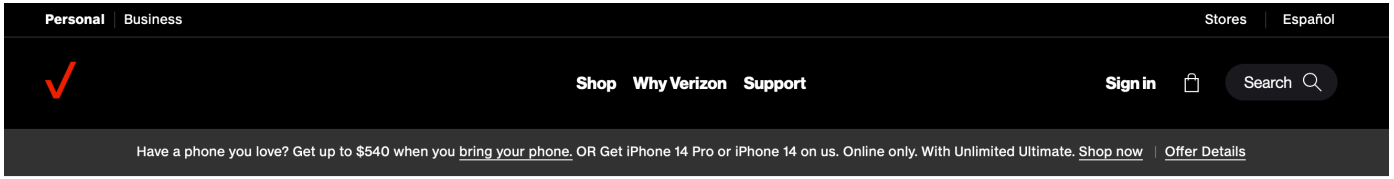
Claim	Public Documentation
	 Verizon sells smartphones on https://www.verizon.com/smartphones. Verizon sells "basic" phones on https://www.verizon.com/basic-phones. Verizon sells hotspot devices on https://www.verizon.com/internet-devices. Verizon sells laptops and tablets on https://www.verizon.com/tablets. For further example, the Apple iPhone 15 Pro model is sold or used by Verizon and includes 128GB, 256GB, 512GB, or 1TB of memory storage, in which control policies for applications are stored. *See, e.g.*, https://www.apple.com/iphone-15-pro/specs/:

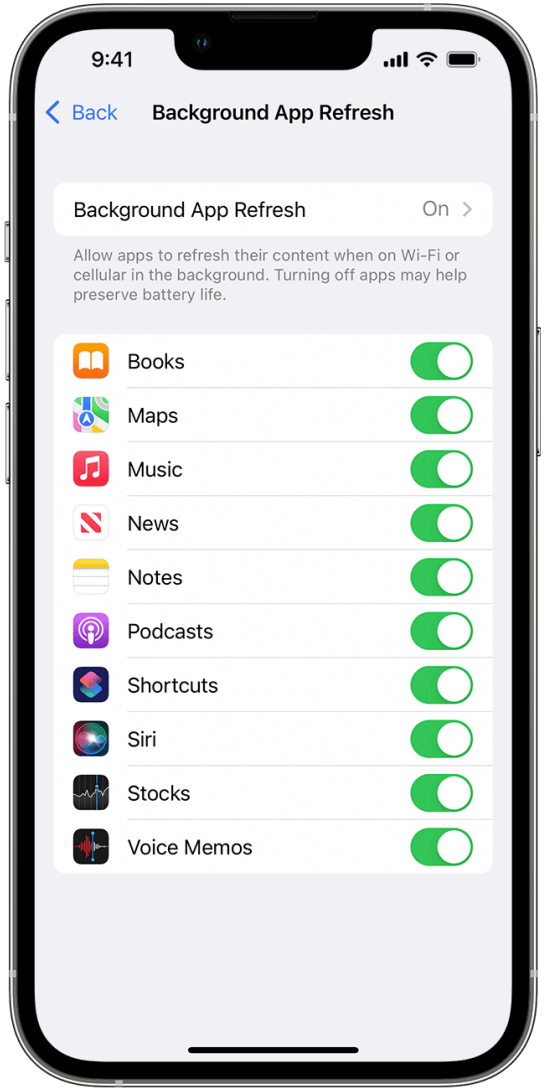
Claim	Public Documentation
	 For further example, the Apple iPhone 15 Pro model has a A17 Pro Chip. *See, e.g.*, https://www.apple.com/iphone-15-pro/specs/ 
[1a] a wireless wide area network (WWAN) modem to communicate data for Internet service activities between the device and at least one WWAN, when configured for and connected to the WWAN;	The Accused Instrumentalities include "a wireless wide area network (WWAN) modem to communicate data for Internet service activities between the device and at least one WWAN, when configured for and connected to the WWAN." This WWAN modem in the Accused Instrumentalities provides a connection to a Verizon's wireless network. For example, Apple's devices, including the iPhone 15 Pro, are sold or used by Verizon and comprise a wireless modem for communicating with mobile service base stations. *See, e.g.*, https://www.apple.com/iphone-15-pro/specs/:

Claim	Public Documentation
	
[1b] a wireless local area network (WLAN) modem to communicate data for Internet service activities between the device and at least one WLAN, when configured for and connected to the WLAN;	The Accused Instrumentalities include "a wireless local area network (WLAN) modem to communicate data for Internet service activities between the device and at least one WLAN, when configured for and connected to the WLAN." For example, Apple's devices, including the iPhone 15 Pro, are sold or used by Verizon and comprises a wi-fi modem for communicating over a wi-fi networks. *See, e.g.*, https://www.apple.com/iphone-15-pro/specs/:

Claim	Public Documentation
	
[1c] a non-transient memory to store	The Accused Instrumentalities include "a non-transient memory to store." For example, Apple's devices, including the iPhone 15 Pro, comprise a memory. As a specific example, the iPhone 15 Pro sold or used by Verizon includes 128GB, 256GB, 512GB, or 1TB of memory storage, in which control policies for applications are stored. *See, e.g.*, https://www.apple.com/iphone-15-pro/specs/:

Claim	Public Documentation
	
[1d] a differential traffic control policy list distinguishing between a first one or more applications resident on the device and a second one or more applications and/or services resident on the device, and	The Accused Instrumentalities comprise "a differential traffic control policy list distinguishing between a first one or more applications resident on the device and a second one or more applications and/or services resident on the device." For example, Apple's devices, including the iPhone 15 Pro, run the Apple iOS Operating System, which comprise at least Apple's "Background App Refresh" and "Low Power Mode" features include policies which distinguish between applications and/or services. *See, e.g.*, https://www.verizon.com/support/knowledge-base-207174/:

Claim	Public Documentation
	 Support › Apple › Apple iPhone 7 Plus **Apple iPhone - Turn Background App Refresh On / Off** **NOTE** When Background App Refresh is turned on, apps that take advantage of this feature can refresh themselves in the background. For additional info, refer to multitasking and background app refresh. 1. From a Home screen on your **Settings** › **General**. → If an app isn't available on your Home screen, swipe left to access the App Library. 2. Tap **Background App Refresh** twice then tap one of the following: → When low power mode is on, the background app refresh is disabled. • Off • Wi-Fi • Wi-Fi and Cellular Data https://support.apple.com/en-us/HT202070:

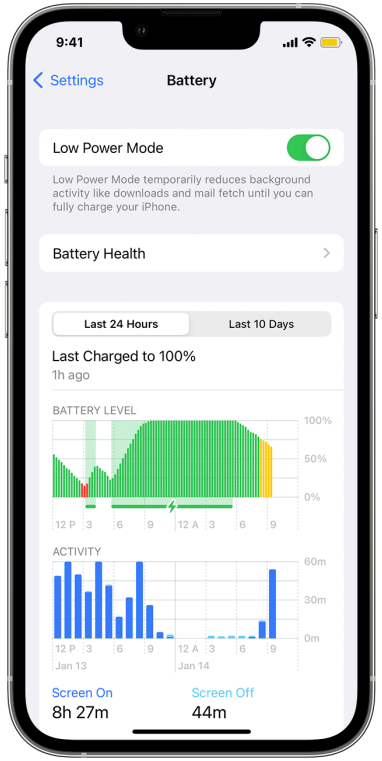
Claim	Public Documentation
	# Use Background App Refresh After you switch to a different app, some apps run for a short period of time before they're set to a suspended state. Apps that are in a suspended state aren't actively in use, open, or taking up system resources. With Background App Refresh, suspended apps can check for updates and new content. If you want suspended apps to check for new content, go to Settings > General > Background App Refresh and turn on Background App Refresh. If you quit an app from the app switcher, it might not be able to run or check for new content before you open it again.  https://support.apple.com/en-us/HT205234:

Use Low Power Mode to save battery life on your iPhone or iPad

Low Power Mode reduces the amount of power that your iPhone or iPad uses when the battery gets low.

To turn Low Power Mode on or off, go to Settings > Battery. You can also turn Low Power Mode on and off from Control Center. Go to Settings > Control Center > Customize Controls, then select Low Power Mode to add it to Control Center.

When Low Power Mode is on, your iPhone or iPad will last longer before you need to charge it, but some features might take longer to update or complete. Also, some tasks might not work until you turn off Low Power Mode, or until you charge your iPhone or iPad to 80% or higher.



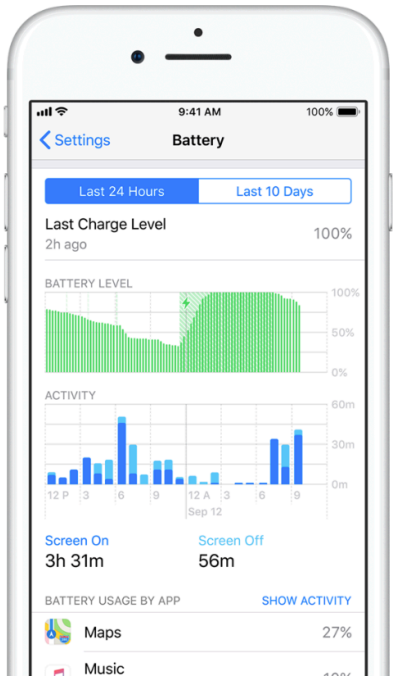
Low Power Mode reduces or affects these features:

- 5G (except for video streaming) on iPhone 12 and iPhone 13 models[1]
- Auto-Lock (defaults to 30 seconds)
- Display brightness
- Display refresh rate (limited up to 60 Hz) on iPhone and iPad models with ProMotion display[2]
- Some visual effects
- iCloud Photos (temporarily paused)
- Automatic downloads
- Email fetch
- Background app refresh

When Low Power Mode is on, the battery in the status bar will be yellow. You'll see a yellow battery icon and the battery percentage. After you charge your iPhone or iPad to 80% or higher, Low Power Mode automatically turns off.

1. If you turn on Low Power Mode, 5G is disabled, except in some cases like video streaming and large downloads on iPhone 12 and iPhone 13 models. With iPhone 12 models, Low Power Mode disables 5G standalone (where available).

2. These devices have ProMotion display: iPhone 13 Pro and later, iPhone 13 Pro Max and later, iPad Pro 10.5-inch, all iPad Pro 11-inch models, and iPad Pro 12.9-inch (2nd generation) and later.

Claim	Public Documentation
	https://www.apple.com/batteries/maximizing-performance/: **View Battery Usage information** With iOS, you can easily manage your device's battery life, because you can see the proportion of your battery used by each app (unless the device is charging). To view your usage, go to Settings > Battery. Here are the messages you may see listed below the apps you've been using: **Background Activity.** This indicates that the battery was used by the app while it was in the background — that is, while you were using another app. • To improve battery life, you can turn off the feature that allows apps to refresh in the background. Go to Settings > General > Background App Refresh and select Wi-Fi, Wi-Fi & Cellular Data, or Off to turn off Background App Refresh entirely. • If the Mail app lists Background Activity, you can choose to fetch data manually or increase the fetch interval. Go to Settings > Accounts & Passwords > Fetch New Data.  ; https://support.apple.com/en-us/HT213336; https://developer.apple.com/documentation/uikit/windows_and_screens/scenes/preparing_your_ui_to_run_in_the_background/; https://developer.apple.com/documentation/uikit/app_and_environment/scenes/preparing_your_ui_to_run_in_the_background/about_the_background_execution_sequence/; https://developer.apple.com/documentation/uikit/app_and_environment/scenes/preparing_your_ui_to_run_in_the_background/extending_your_app_s_background_execution_time/; https://developer.apple.com/documentation/backgroundtasks/; https://developer.apple.com/documentation/watchkit/background_execution/using_background_tasks/; https://developer.apple.com/documentation/uikit/windows_and_screens/scenes/prepar-

Claim	Public Documentation
	ing_your_ui_to_run_in_the_background/using_background_tasks_to_update_your_app/; https://developer.apple.com/documentation/backgroundtasks/refreshing_and_maintaining_your_app_using_background_tasks/; https://developer.apple.com/documentation/backgroundtasks https://developer.apple.com/documentation/backgroundtasks/bgapprefreshtask; https://developer.apple.com/documentation/backgroundtasks/bgprocessingtask; https://developer.apple.com/documentation/backgroundtasks/bgtask; https://developer.apple.com/documentation/uikit/uiapplication/1622976-backgroundfetchintervalminimum/; https://developer.apple.com/documentation/uikit/uiapplication/1622994-backgroundrefreshstatus/; https://developer.apple.com/documentation/uikit/uiapplication/1623003-applicationstate; https://developer.apple.com/documentation/uikit/uiapplication/state; https://developer.apple.com/documentation/watchkit/background_execution; https://developer.apple.com/documentation/foundation/url_loading_system; https://developer.apple.com/documentation/foundation/urlsession; https://developer.apple.com/documentation/devicemanagement/mail; https://developer.apple.com/documentation/security/secure_transport/using_the_secure_socket_layer_for_network_communication; https://developer.apple.com/documentation/networkextension/personal_vpn; https://developer.apple.com/documentation/foundation/nsproxy; https://developer.apple.com/documentation/messages; https://developer.apple.com/documentation/avfoundation/avplayer; https://developer.apple.com/documentation/avfoundation/media_playback/configuring_your_app_for_media_playback; https://developer.apple.com/videos/play/wwdc2019/707/; https://developer.apple.com/videos/play/wwdc2020/10063:

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	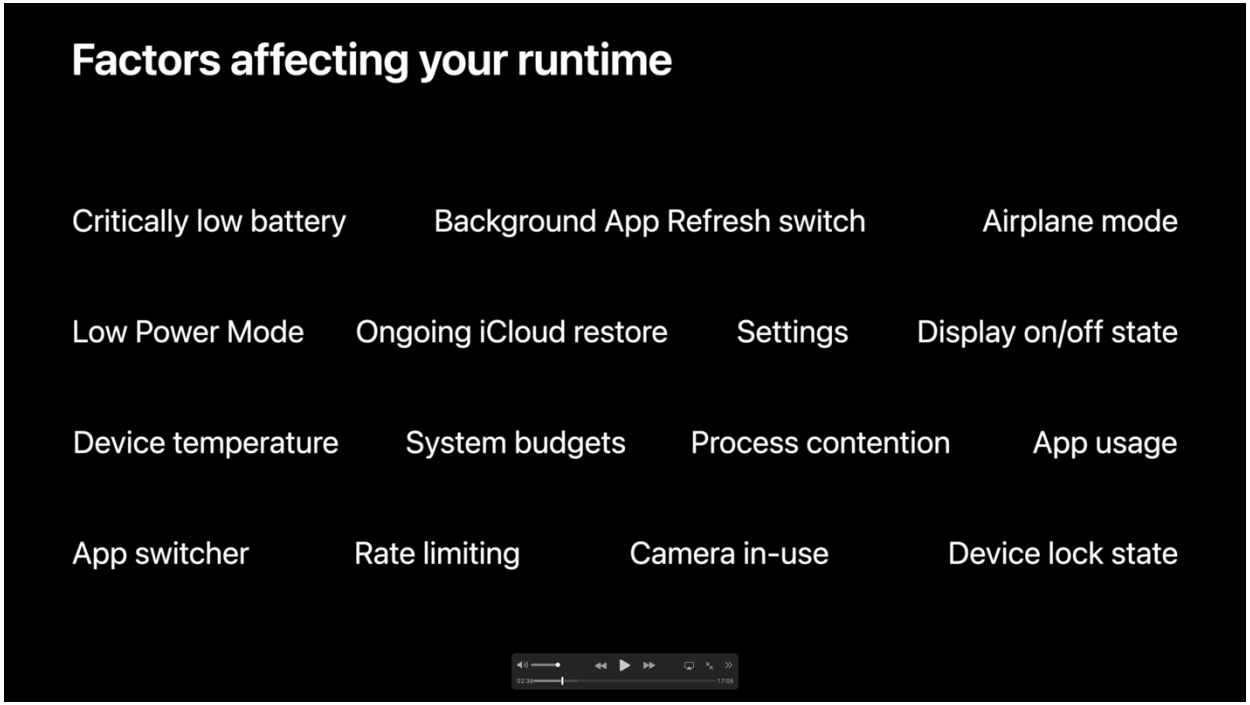

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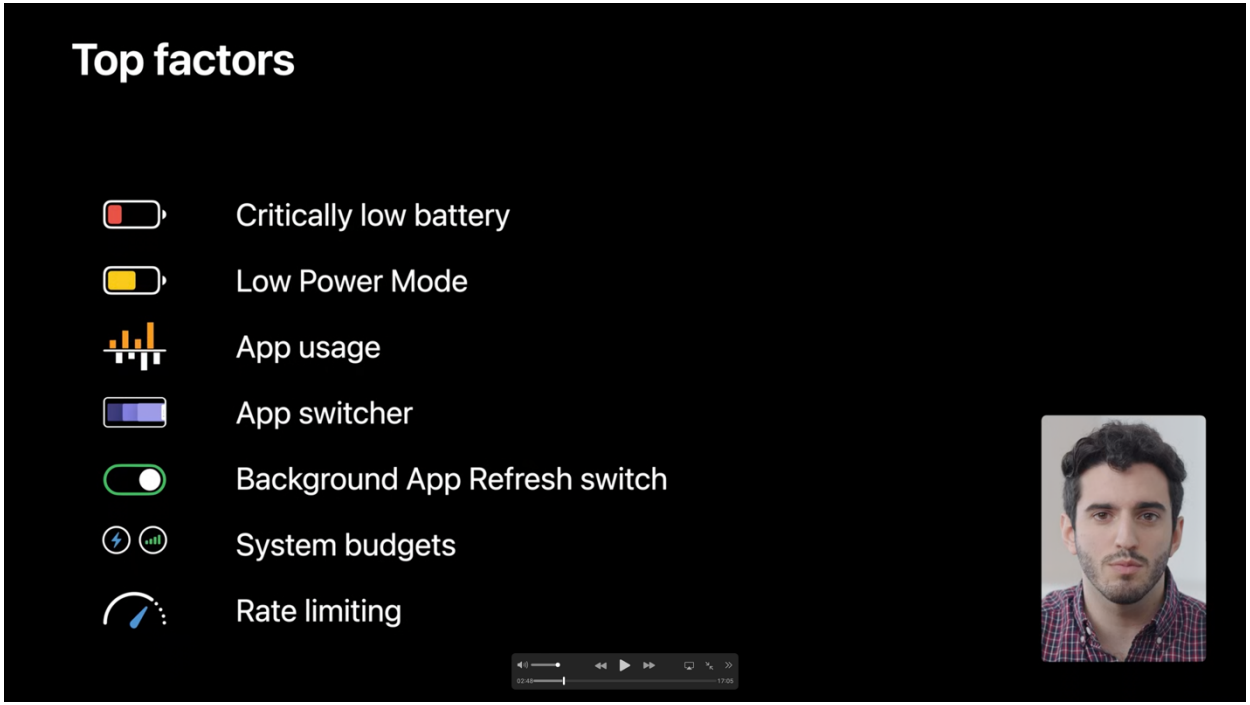
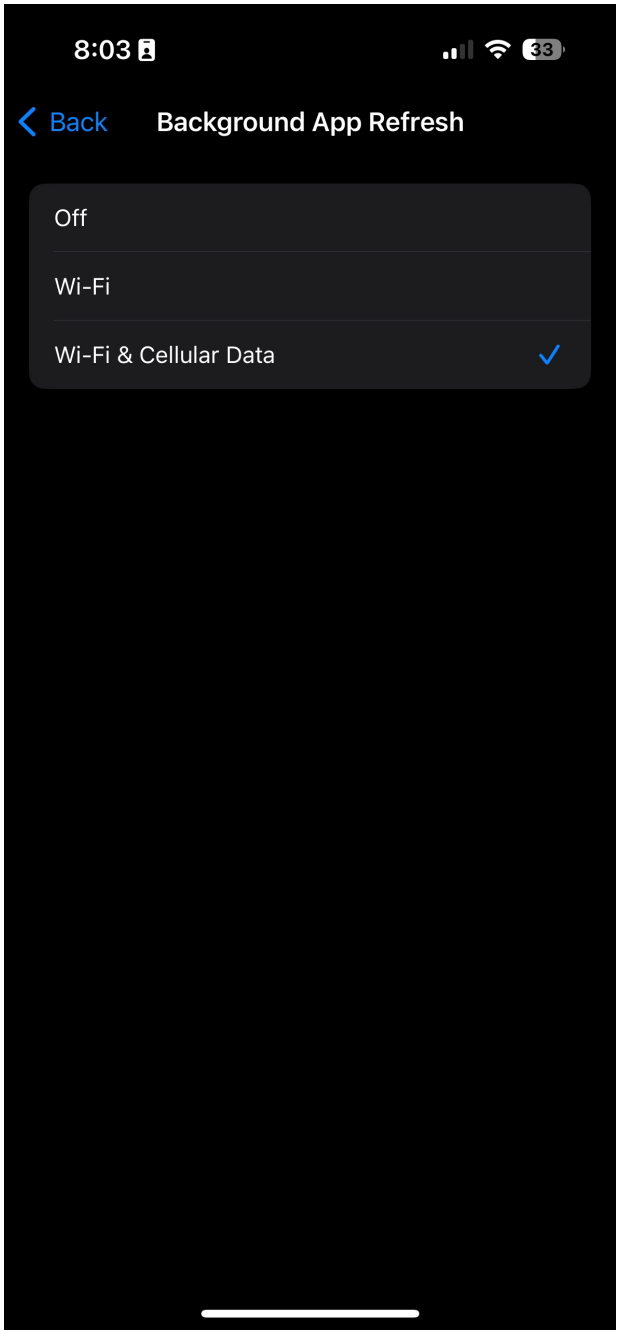
	 ; *see also* exemplary screen shots below:


8:03
33
Back
Background App Refresh
Off
Wi-Fi
Wi-Fi & Cellular Data

Claim	Public Documentation
	 *See also, e.g.,* https://www.verizon.com/plans/; https://www.verizon.com/business/products/plans/; https://www.verizon.com/plans/international/international-travel/; https://www.verizon.com/support/international-travel-faqs/.
[1e] a differential traffic control policy applicable to at least some Internet service activities by or on behalf of the first one or more applications;	The Accused Instrumentalities comprises "a differential traffic control policy applicable to at least some Internet service activities by or on behalf of the first one or more applications." For example, Apple's devices, including the iPhone 15 Pro, run the Apple iOS Operating System, which comprise at least Apple's "Background App Refresh" and "Low Power Mode" features include policies which apply to at least some activities by or on behalf of applications and/or services. *See, e.g.*, https://www.verizon.com/support/knowledge-base-207174/:

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	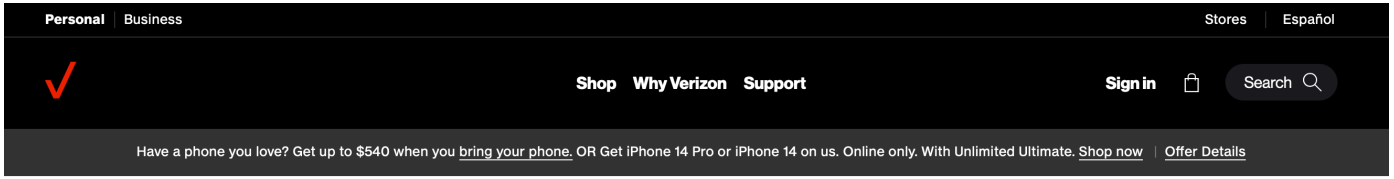 Support › Apple › Apple iPhone 7 Plus **Apple iPhone - Turn Background App Refresh On / Off** **NOTE** When Background App Refresh is turned on, apps that take advantage of this feature can refresh themselves in the background. For additional info, refer to multitasking and background app refresh. 1. From a Home screen on your **Settings** › **General**. → If an app isn't available on your Home screen, swipe left to access the App Library. 2. Tap **Background App Refresh** twice then tap one of the following: → When low power mode is on, the background app refresh is disabled. • Off • Wi-Fi • Wi-Fi and Cellular Data https://support.apple.com/en-us/HT202070:

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	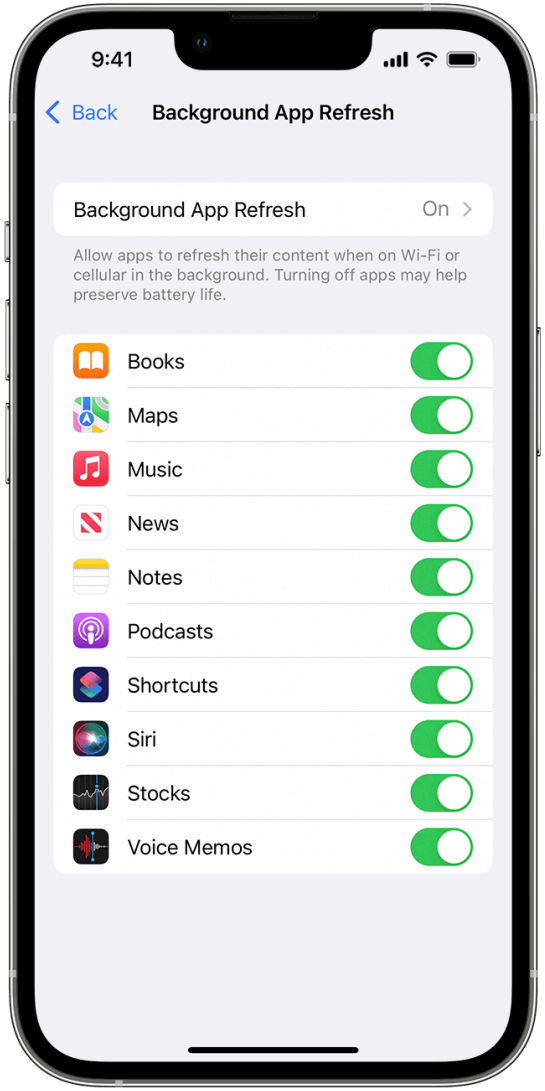 ## Use Background App Refresh After you switch to a different app, some apps run for a short period of time before they're set to a suspended state. Apps that are in a suspended state aren't actively in use, open, or taking up system resources. With Background App Refresh, suspended apps can check for updates and new content. If you want suspended apps to check for new content, go to Settings > General > Background App Refresh and turn on Background App Refresh. If you quit an app from the app switcher, it might not be able to run or check for new content before you open it again. https://support.apple.com/en-us/HT205234:

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Low Power Mode reduces or affects these features:

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- Background app refresh

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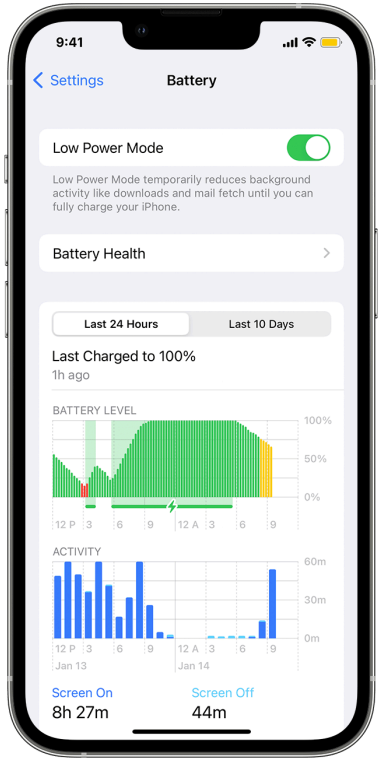

1. If you turn on Low Power Mode, 5G is disabled, except in some cases like video streaming and large downloads on iPhone 12 and iPhone 13 models. With iPhone 12 models, Low Power Mode disables 5G standalone (where available).

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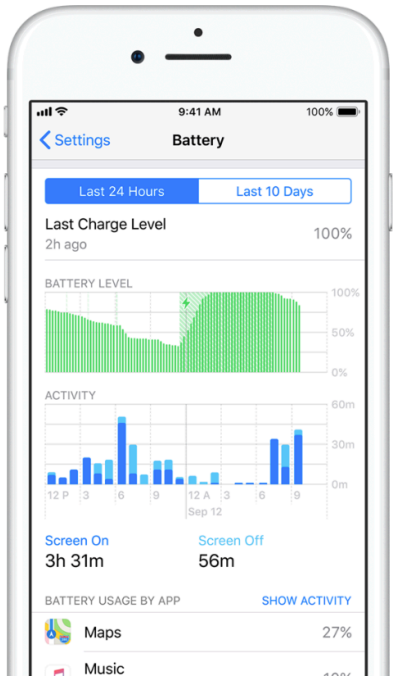
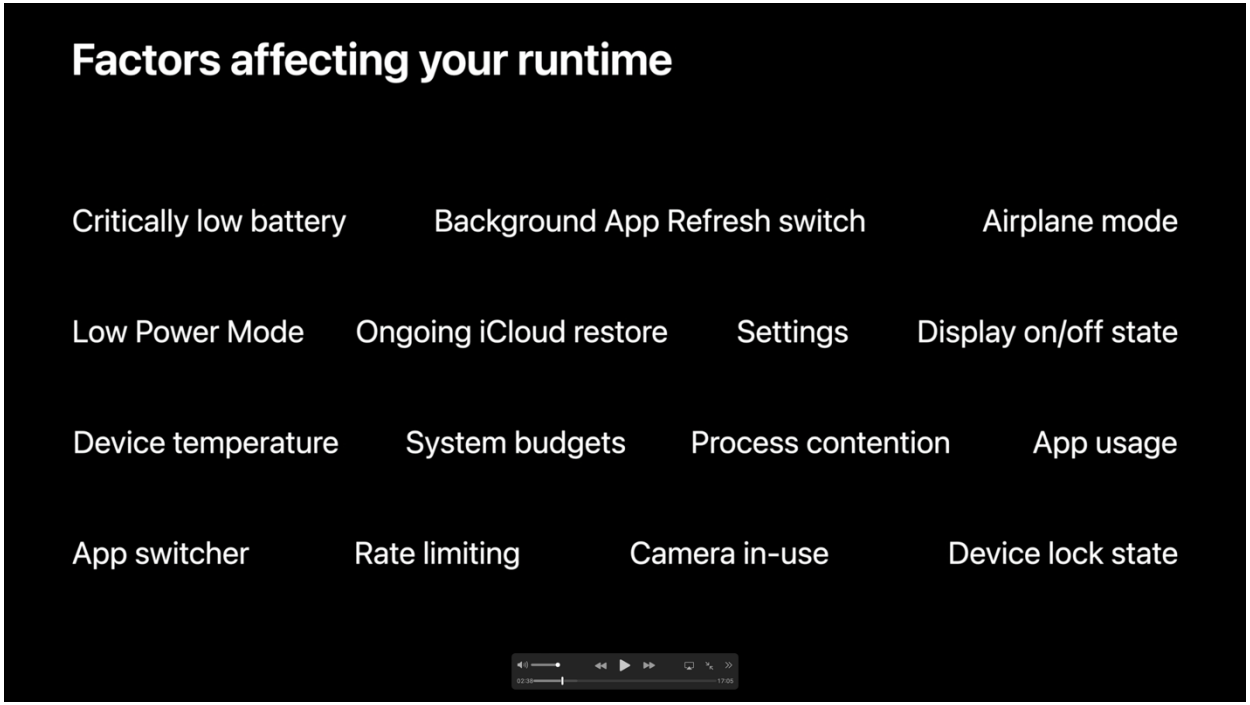
Claim	Public Documentation
	https://www.apple.com/batteries/maximizing-performance/: **View Battery Usage information** With iOS, you can easily manage your device's battery life, because you can see the proportion of your battery used by each app (unless the device is charging). To view your usage, go to Settings > Battery. Here are the messages you may see listed below the apps you've been using: **Background Activity.** This indicates that the battery was used by the app while it was in the background — that is, while you were using another app. • To improve battery life, you can turn off the feature that allows apps to refresh in the background. Go to Settings > General > Background App Refresh and select Wi-Fi, Wi-Fi & Cellular Data, or Off to turn off Background App Refresh entirely. • If the Mail app lists Background Activity, you can choose to fetch data manually or increase the fetch interval. Go to Settings > Accounts & Passwords > Fetch New Data.  ; https://developer.apple.com/documentation/uikit/windows_and_screens/scenes/preparing_your_ui_to_run_in_the_background/; https://developer.apple.com/documentation/uikit/app_and_environment/scenes/preparing_your_ui_to_run_in_the_background/about_the_background_execution_sequence/; https://developer.apple.com/documentation/uikit/app_and_environment/scenes/preparing_your_ui_to_run_in_the_background/extending_your_app_s_background_execution_time/; https://developer.apple.com/documentation/backgroundtasks/; https://developer.apple.com/documentation/watchkit/background_execution/using_background_tasks/; https://developer.apple.com/documentation/uikit/windows_and_screens/scenes/prepar-

Claim	Public Documentation
	ing_your_ui_to_run_in_the_background/using_background_tasks_to_update_your_app/; https://developer.apple.com/documentation/backgroundtasks/refreshing_and_maintaining_your_app_using_background_tasks/; https://developer.apple.com/documentation/backgroundtasks https://developer.apple.com/documentation/backgroundtasks/bgapprefreshtask; https://developer.apple.com/documentation/backgroundtasks/bgprocessingtask; https://developer.apple.com/documentation/backgroundtasks/bgtask; https://developer.apple.com/documentation/uikit/uiapplication/1622976-backgroundfetchintervalminimum/; https://developer.apple.com/documentation/uikit/uiapplication/1622994-backgroundrefreshstatus/; https://developer.apple.com/documentation/uikit/uiapplication/1623003-applicationstate; https://developer.apple.com/documentation/uikit/uiapplication/state; https://developer.apple.com/documentation/foundation/url_loading_system; https://developer.apple.com/documentation/foundation/urlsession; https://developer.apple.com/documentation/devicemanagement/mail; https://developer.apple.com/documentation/security/secure_transport/using_the_secure_socket_layer_for_network_communication; https://developer.apple.com/documentation/networkextension/personal_vpn; https://developer.apple.com/documentation/foundation/nsproxy; https://developer.apple.com/documentation/messages; https://developer.apple.com/documentation/avfoundation/avplayer; https://developer.apple.com/documentation/avfoundation/media_playback/configuring_your_app_for_media_playback; https://developer.apple.com/videos/play/wwdc2019/707/; https://developer.apple.com/videos/play/wwdc2020/10063:

Claim	Public Documentation
	

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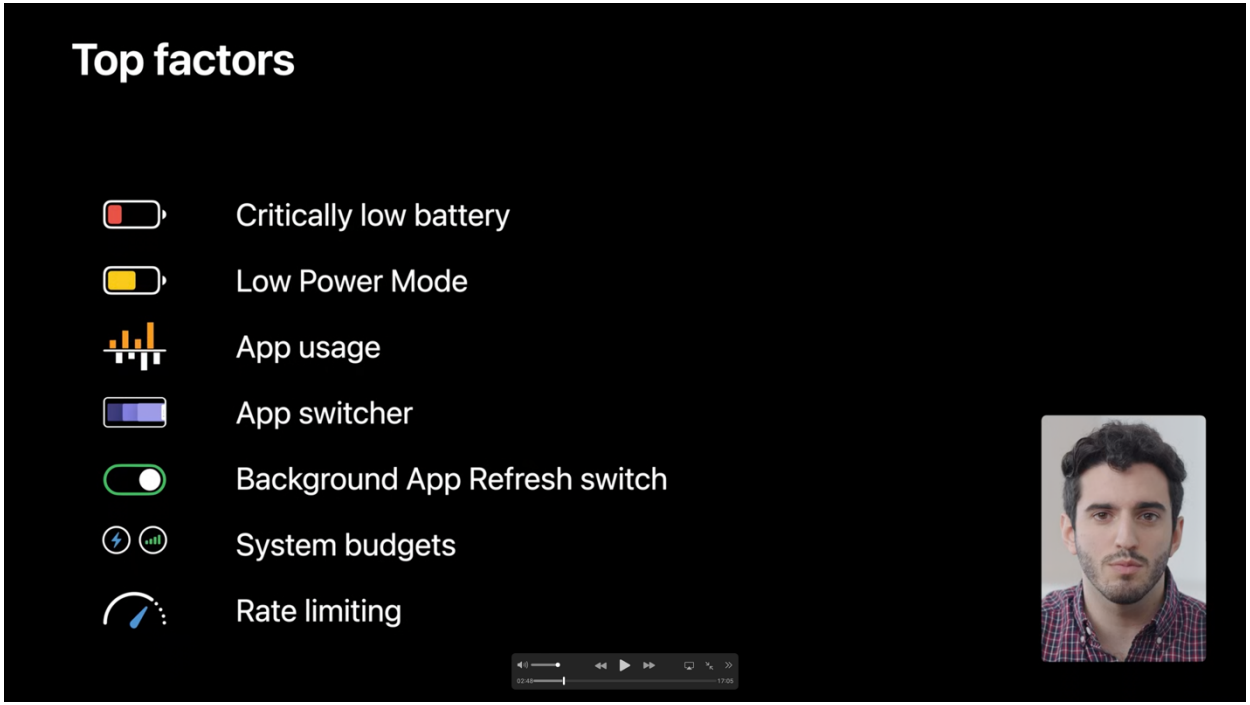
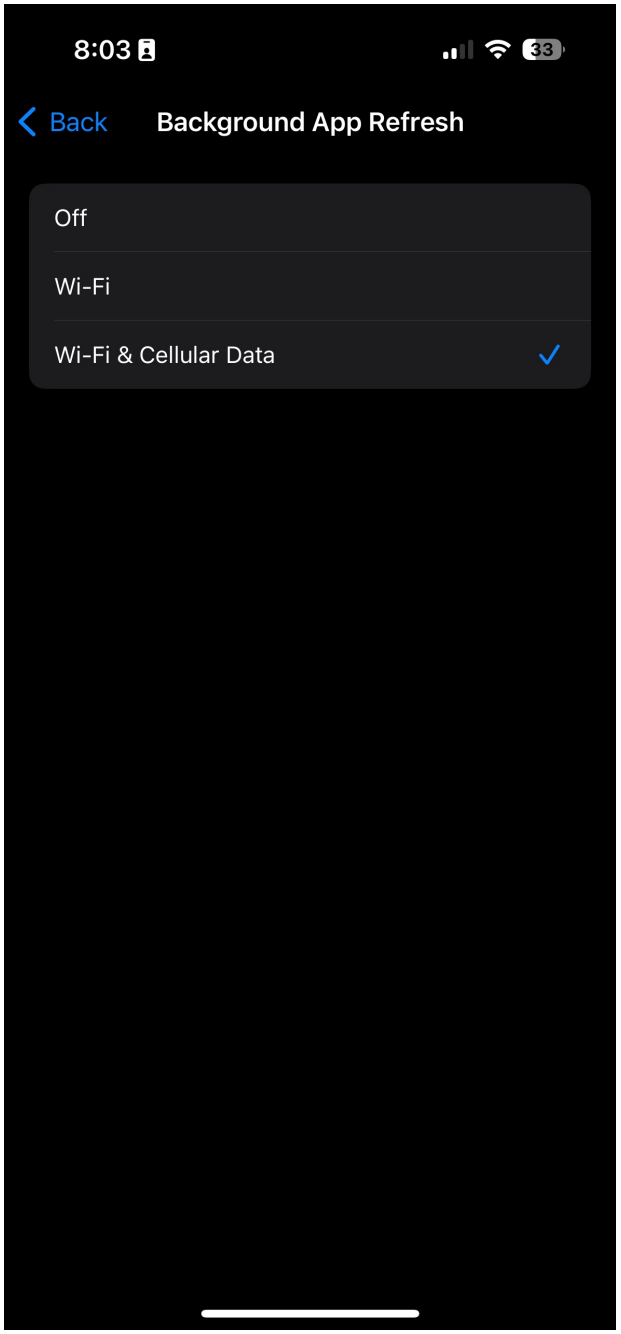
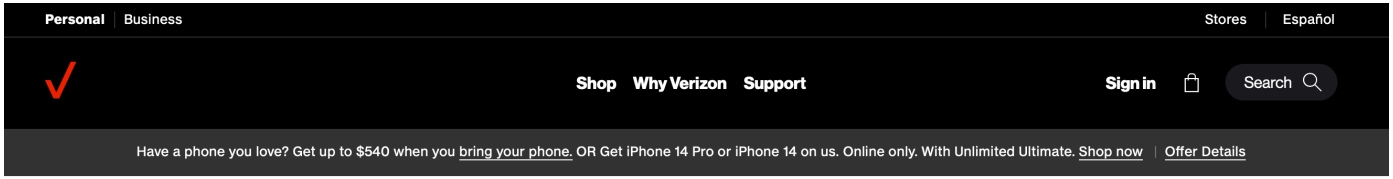
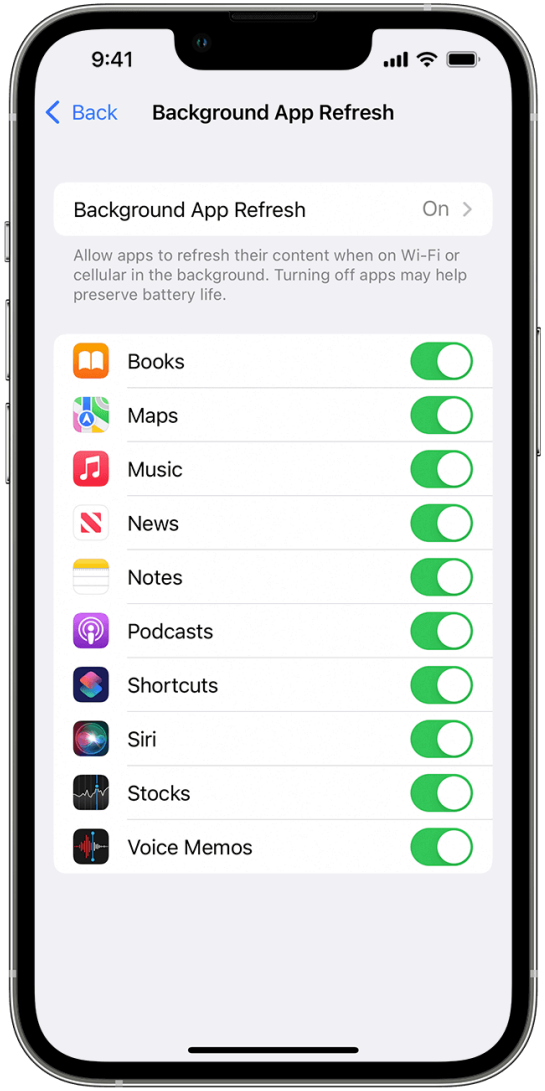
	 ; *see also* exemplary screen shots below:


8:03
33
Back
Background App Refresh
Off
Wi-Fi
Wi-Fi & Cellular Data

Claim	Public Documentation
	 *See also, e.g.,* https://www.verizon.com/plans/; https://www.verizon.com/business/products/plans/; https://www.verizon.com/plans/international/international-travel/; https://www.verizon.com/support/international-travel-faqs/.
[1f] an interface to allow a user to augment the differential traffic control policy for the first one or more applications but not for the second one or more applications and/or services; and	The Accused Instrumentalities include "an interface to allow a user to augment the differential traffic control policy for the first one or more applications but not for the second one or more applications and/or services." For example, Apple's devices, including the iPhone 15 Pro, sold or used by Verizon include an interface which allow users to augment policies and settings for some applications and/or services, but not all applications and/or services (*e.g.*, system services). *See, e.g.*, https://www.verizon.com/support/knowledge-base-207174/:

Claim	Public Documentation
	 Support › Apple › Apple iPhone 7 Plus **Apple iPhone - Turn Background App Refresh On / Off** **NOTE** When Background App Refresh is turned on, apps that take advantage of this feature can refresh themselves in the background. For additional info, refer to multitasking and background app refresh. 1. From a Home screen on your **Settings** › **General**. → If an app isn't available on your Home screen, swipe left to access the App Library. 2. Tap **Background App Refresh** twice then tap one of the following: → When low power mode is on, the background app refresh is disabled. • Off • Wi-Fi • Wi-Fi and Cellular Data https://support.apple.com/en-us/HT202070:

Claim	Public Documentation
	 ## Use Background App Refresh After you switch to a different app, some apps run for a short period of time before they're set to a suspended state. Apps that are in a suspended state aren't actively in use, open, or taking up system resources. With Background App Refresh, suspended apps can check for updates and new content. If you want suspended apps to check for new content, go to Settings > General > Background App Refresh and turn on Background App Refresh. If you quit an app from the app switcher, it might not be able to run or check for new content before you open it again. https://support.apple.com/en-us/HT205234:

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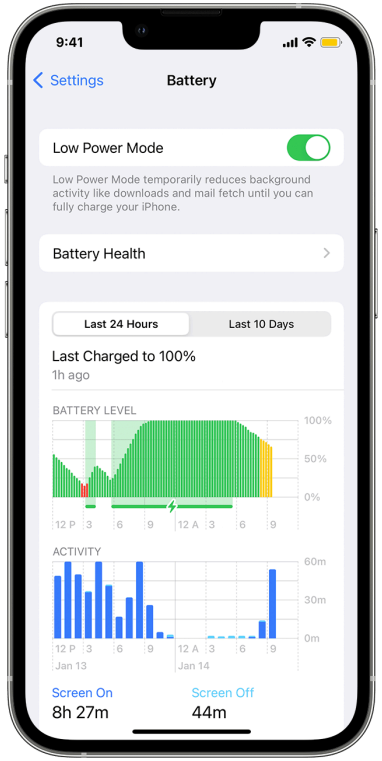
When Low Power Mode is on, your iPhone or iPad will last longer before you need to charge it, but some features might take longer to update or complete. Also, some tasks might not work until you turn off Low Power Mode, or until you charge your iPhone or iPad to 80% or higher.

Low Power Mode reduces or affects these features:

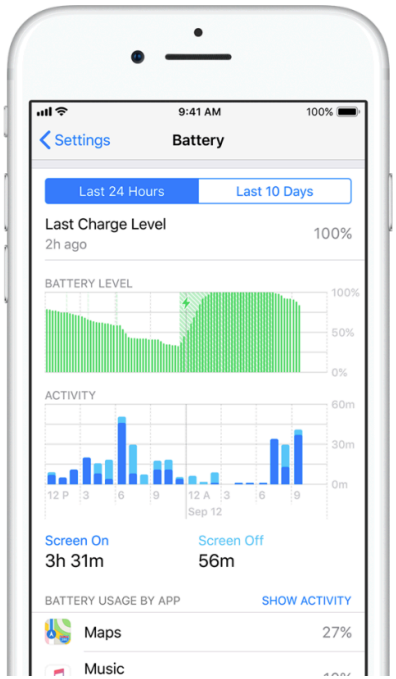
- 5G (except for video streaming) on iPhone 12 and iPhone 13 models[1]
- Auto-Lock (defaults to 30 seconds)
- Display brightness
- Display refresh rate (limited up to 60 Hz) on iPhone and iPad models with ProMotion display[2]
- Some visual effects
- iCloud Photos (temporarily paused)
- Automatic downloads
- Email fetch
- Background app refresh

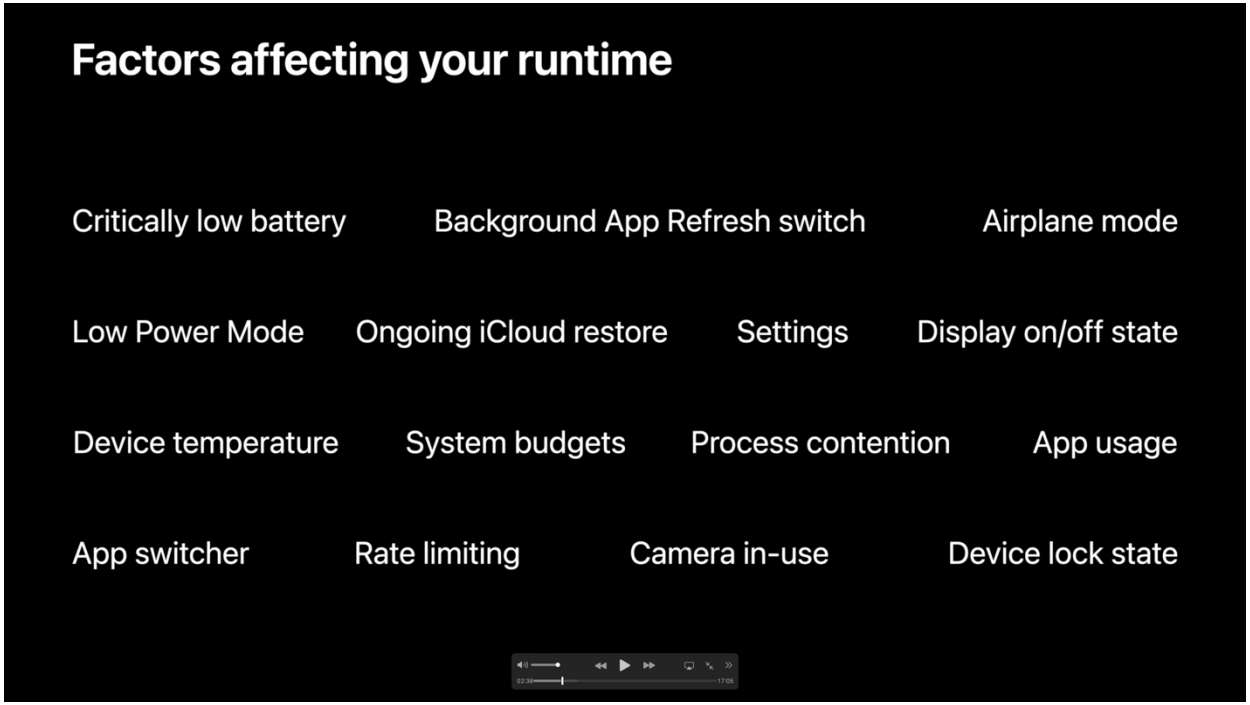
When Low Power Mode is on, the battery in the status bar will be yellow. You'll see a yellow battery icon and the battery percentage. After you charge your iPhone or iPad to 80% or higher, Low Power Mode automatically turns off.

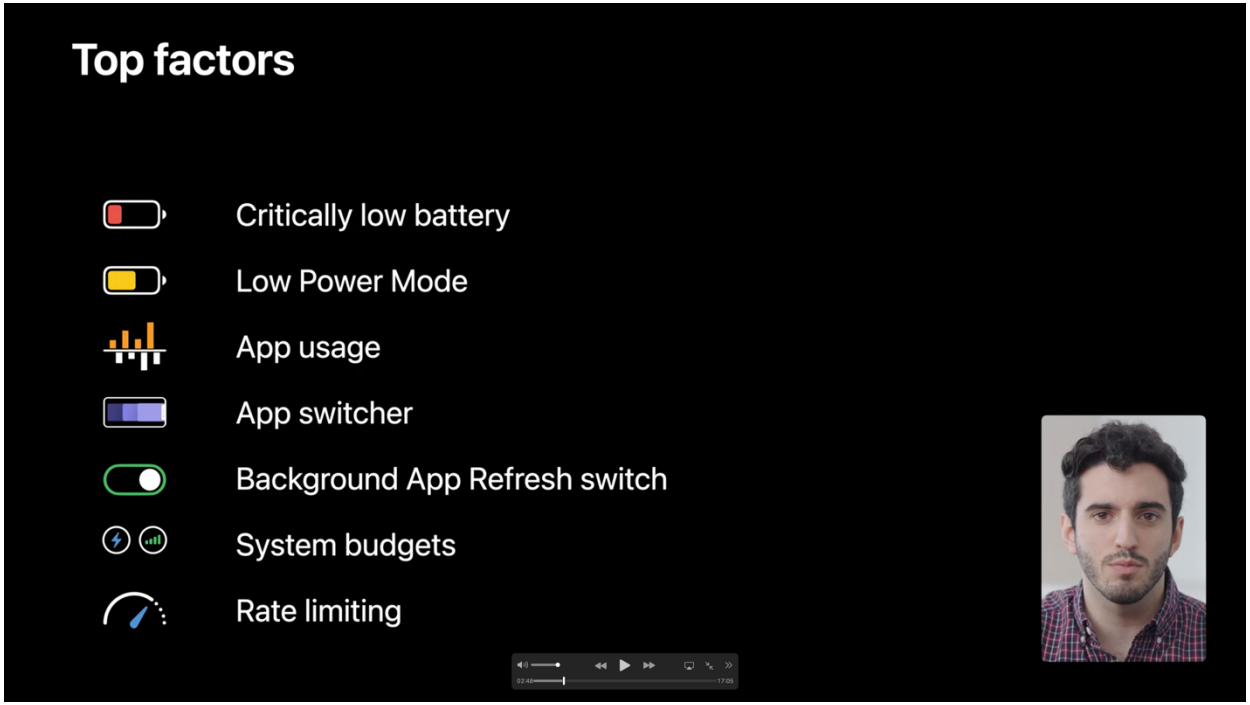


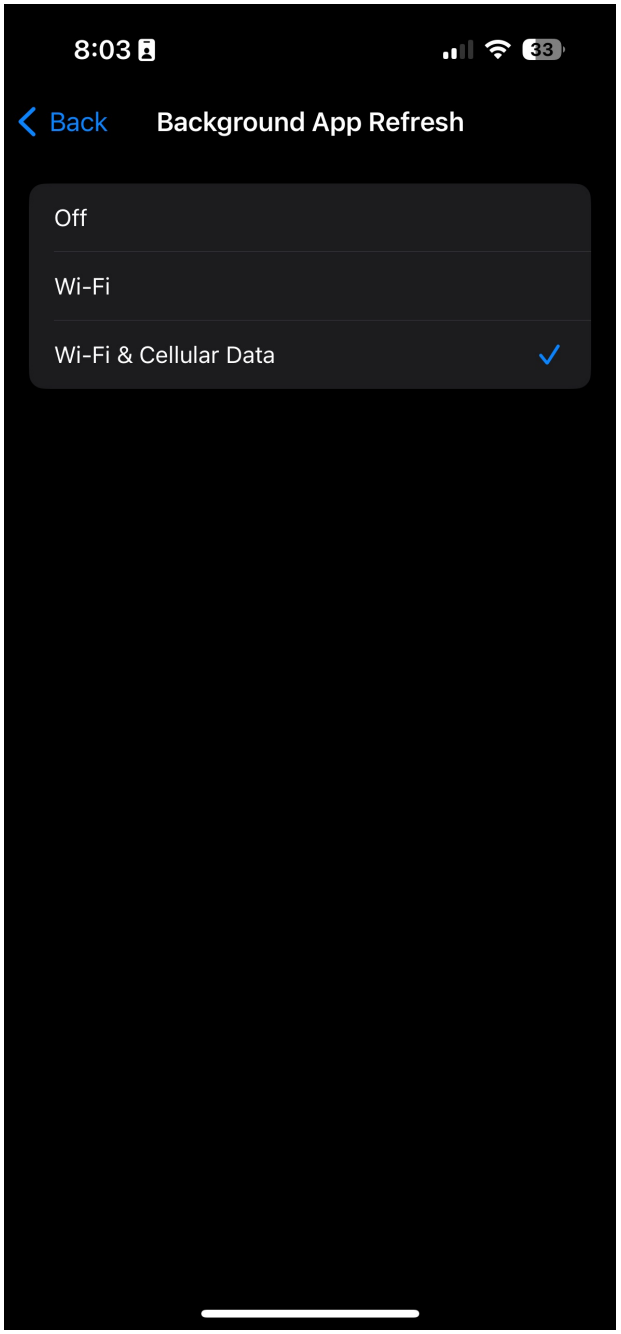
1. If you turn on Low Power Mode, 5G is disabled, except in some cases like video streaming and large downloads on iPhone 12 and iPhone 13 models. With iPhone 12 models, Low Power Mode disables 5G standalone (where available).

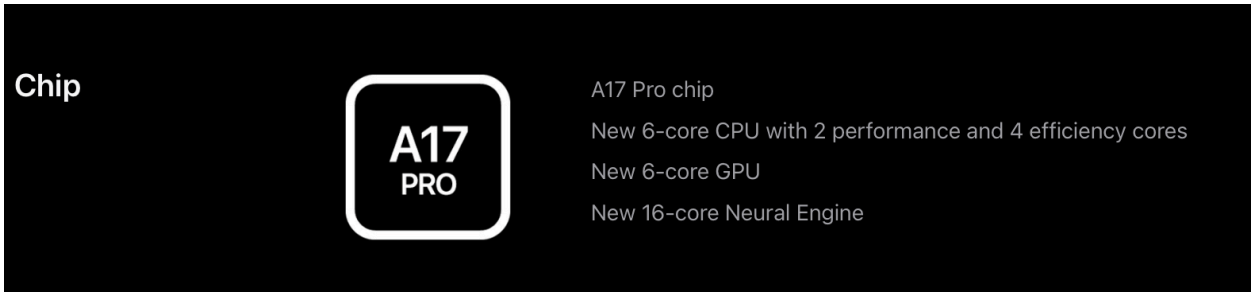
2. These devices have ProMotion display: iPhone 13 Pro and later, iPhone 13 Pro Max and later, iPad Pro 10.5-inch, all iPad Pro 11-inch models, and iPad Pro 12.9-inch (2nd generation) and later.

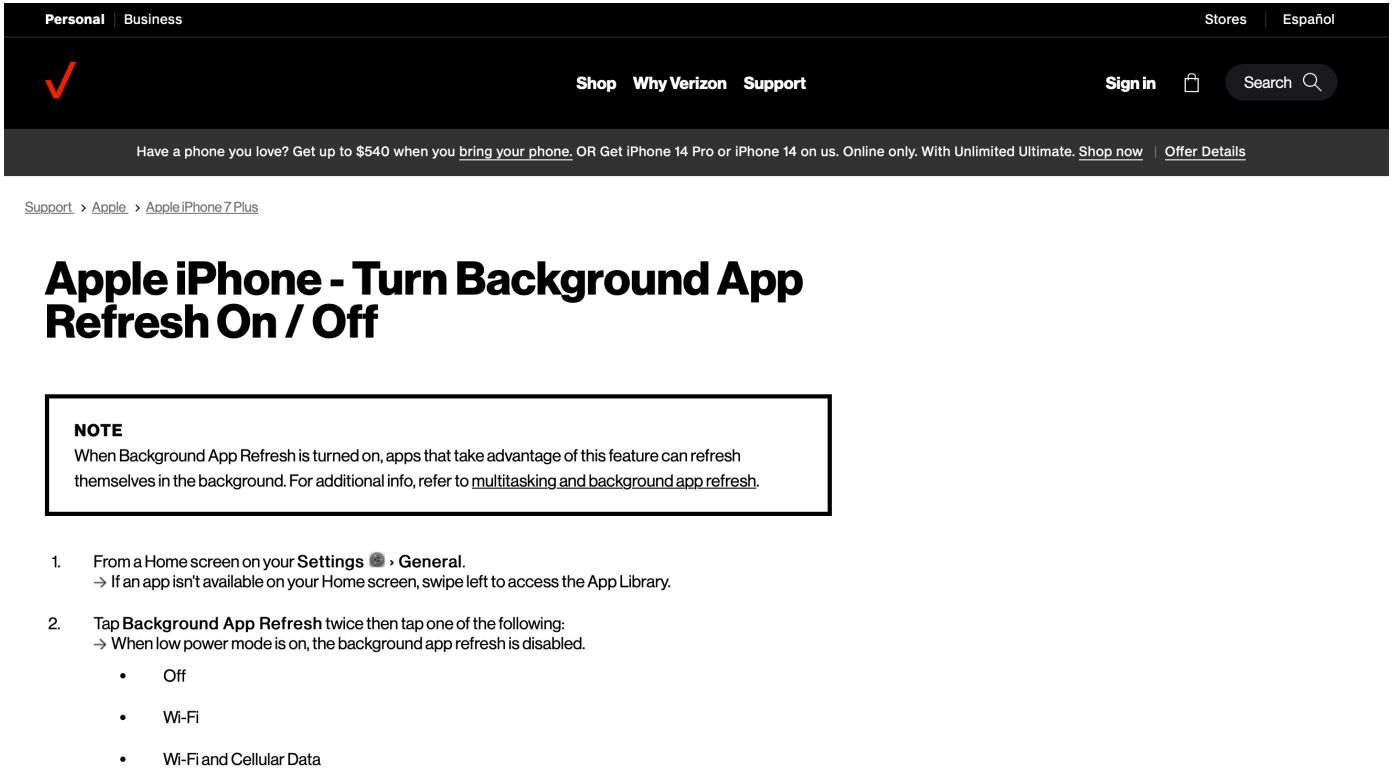
Claim	Public Documentation
	https://www.apple.com/batteries/maximizing-performance/: **View Battery Usage information** With iOS, you can easily manage your device's battery life, because you can see the proportion of your battery used by each app (unless the device is charging). To view your usage, go to Settings > Battery. Here are the messages you may see listed below the apps you've been using: **Background Activity.** This indicates that the battery was used by the app while it was in the background — that is, while you were using another app. • To improve battery life, you can turn off the feature that allows apps to refresh in the background. Go to Settings > General > Background App Refresh and select Wi-Fi, Wi-Fi & Cellular Data, or Off to turn off Background App Refresh entirely. • If the Mail app lists Background Activity, you can choose to fetch data manually or increase the fetch interval. Go to Settings > Accounts & Passwords > Fetch New Data.  ; https://developer.apple.com/videos/play/wwdc2020/10063:

Claim	Public Documentation
	

Claim	Public Documentation
	 ; *see also* exemplary screen shots below:


8:03
33
Back
Background App Refresh
Off
Wi-Fi
Wi-Fi & Cellular Data

Claim	Public Documentation
	
[1g] one or more processors configured to	The Accused Instrumentalities include "one or more processors." For example, Apple's devices, including the iPhone 15 Pro, comprise one or more processors. As a specific example, the iPhone 15 Pro has an A17 Pro Chip. *See, e.g.*, https://www.apple.com/iphone-15-pro/specs/ 

Claim	Public Documentation
[1h] classify a wireless network to which the device currently connects in order to communicate data for Internet service activities as at least one of a plurality of network types that the device can connect with,	The Accused Instrumentalities "classify a wireless network to which the device currently connects in order to communicate data for Internet service activities as at least one of a plurality of network types that the device can connect with." For example, Apple's devices, including the iPhone 15 Pro, sold and used by Verizon classify wireless network connections for communicating internet service activities. *See, e.g.,* https://www.verizon.com/support/knowledge-base-207174/:  https://support.apple.com/en-us/HT202070; https://support.apple.com/en-us/HT205234;

Use Low Power Mode to save battery life on your iPhone or iPad

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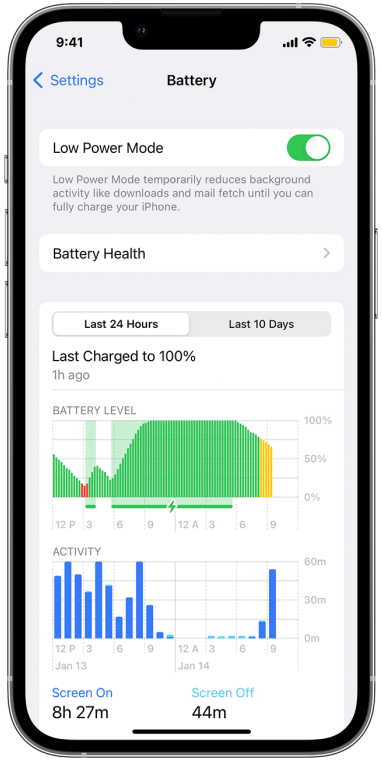
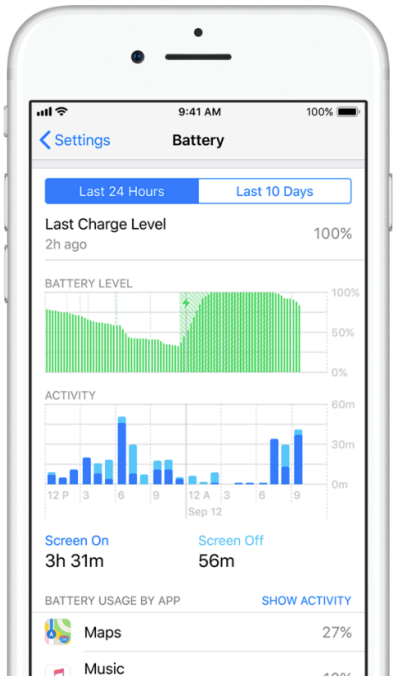
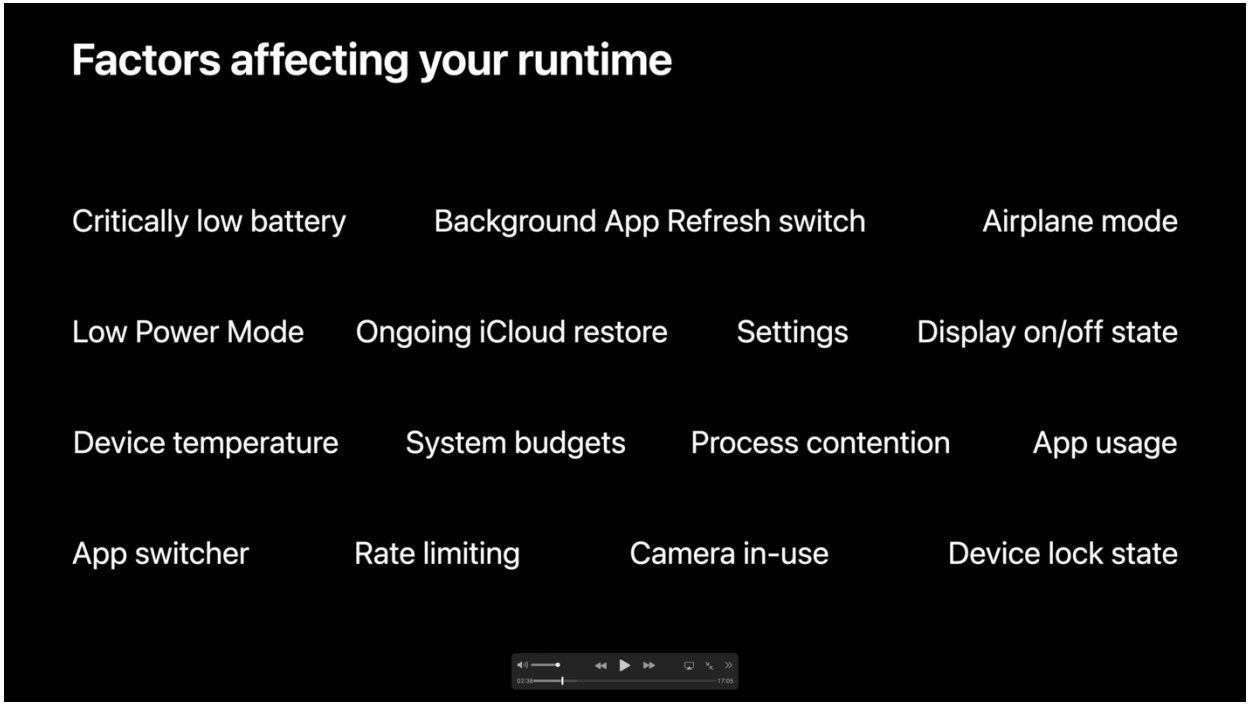


1. If you turn on Low Power Mode, 5G is disabled, except in some cases like video streaming and large downloads on iPhone 12 and iPhone 13 models. With iPhone 12 models, Low Power Mode disables 5G standalone (where available).

2. These devices have ProMotion display: iPhone 13 Pro and later, iPhone 13 Pro Max and later, iPad Pro 10.5-inch, all iPad Pro 11-inch models, and iPad Pro 12.9-inch (2nd generation) and later.

Claim	Public Documentation
	https://www.apple.com/batteries/maximizing-performance/: **View Battery Usage information** With iOS, you can easily manage your device's battery life, because you can see the proportion of your battery used by each app (unless the device is charging). To view your usage, go to Settings > Battery. Here are the messages you may see listed below the apps you've been using: **Background Activity.** This indicates that the battery was used by the app while it was in the background — that is, while you were using another app. • To improve battery life, you can turn off the feature that allows apps to refresh in the background. Go to Settings > General > Background App Refresh and select Wi-Fi, Wi-Fi & Cellular Data, or Off to turn off Background App Refresh entirely. • If the Mail app lists Background Activity, you can choose to fetch data manually or increase the fetch interval. Go to Settings > Accounts & Passwords > Fetch New Data.  ; https://developer.apple.com/documentation/uikit/windows_and_screens/scenes/preparing_your_ui_to_run_in_the_background/; https://developer.apple.com/documentation/uikit/app_and_environment/scenes/preparing_your_ui_to_run_in_the_background/about_the_background_execution_sequence/; https://developer.apple.com/documentation/uikit/app_and_environment/scenes/preparing_your_ui_to_run_in_the_background/extending_your_app_s_background_execution_time/; https://developer.apple.com/documentation/backgroundtasks/; https://developer.apple.com/documentation/watchkit/background_execution/using_background_tasks/; https://developer.apple.com/documentation/uikit/windows_and_screens/scenes/prepar-

Claim	Public Documentation
	ing_your_ui_to_run_in_the_background/using_background_tasks_to_update_your_app/; https://developer.apple.com/documentation/backgroundtasks/refreshing_and_maintaining_your_app_using_background_tasks/; https://developer.apple.com/documentation/backgroundtasks https://developer.apple.com/documentation/backgroundtasks/bgapprefreshtask; https://developer.apple.com/documentation/backgroundtasks/bgprocessingtask; https://developer.apple.com/documentation/backgroundtasks/bgtask; https://developer.apple.com/documentation/uikit/uiapplication/1622976-backgroundfetchintervalminimum/; https://developer.apple.com/documentation/uikit/uiapplication/1622994-backgroundrefreshstatus/; https://developer.apple.com/documentation/uikit/uiapplication/1623003-applicationstate; https://developer.apple.com/documentation/uikit/uiapplication/state; https://developer.apple.com/documentation/foundation/url_loading_system; https://developer.apple.com/documentation/foundation/urlsession; https://developer.apple.com/documentation/devicemanagement/mail; https://developer.apple.com/documentation/security/secure_transport/using_the_secure_socket_layer_for_network_communication; https://developer.apple.com/documentation/networkextension/personal_vpn; https://developer.apple.com/documentation/foundation/nsproxy; https://developer.apple.com/documentation/messages; https://developer.apple.com/documentation/avfoundation/avplayer; https://developer.apple.com/documentation/avfoundation/media_playback/configuring_your_app_for_media_playback; https://developer.apple.com/videos/play/wwdc2019/707/; https://developer.apple.com/videos/play/wwdc2020/10063:

Claim	Public Documentation
	

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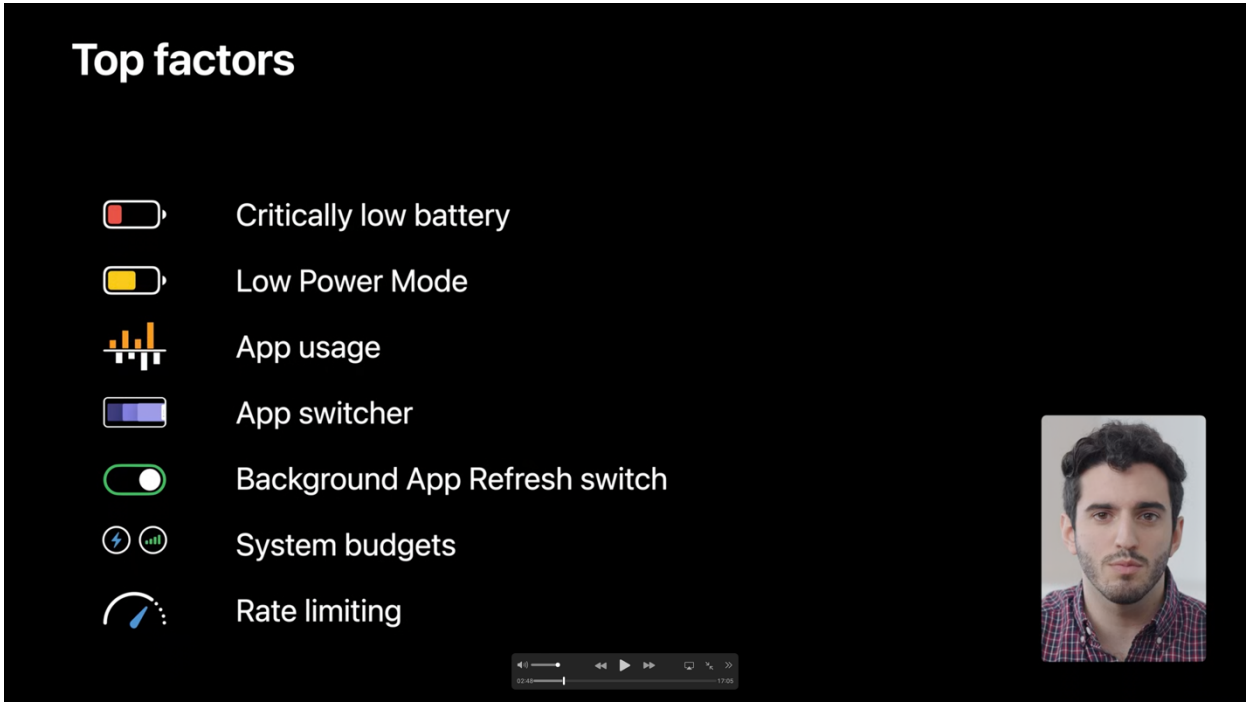
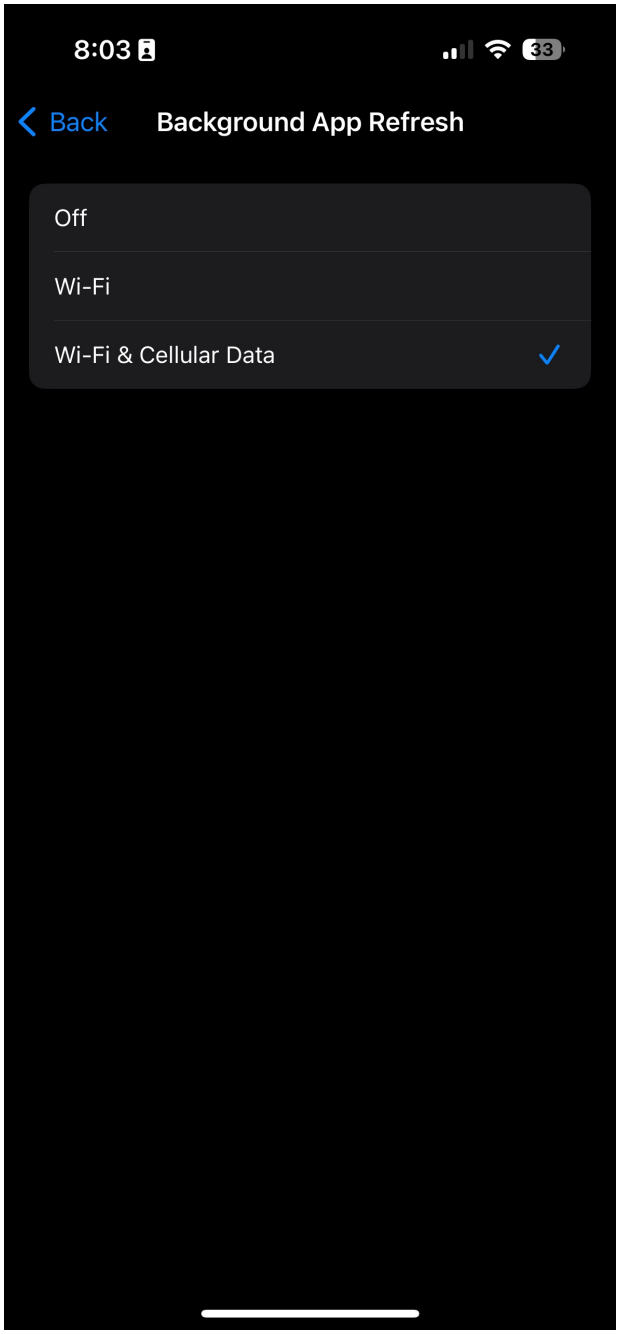
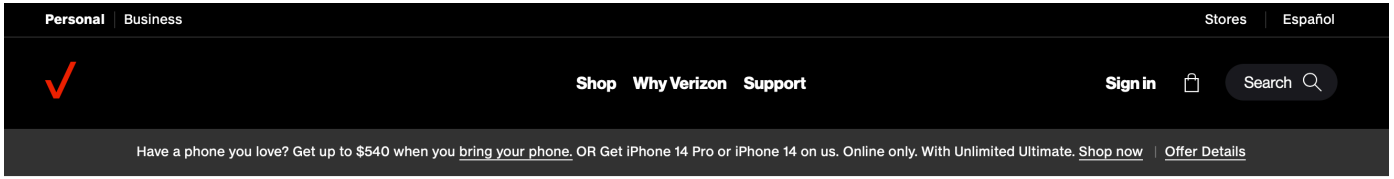
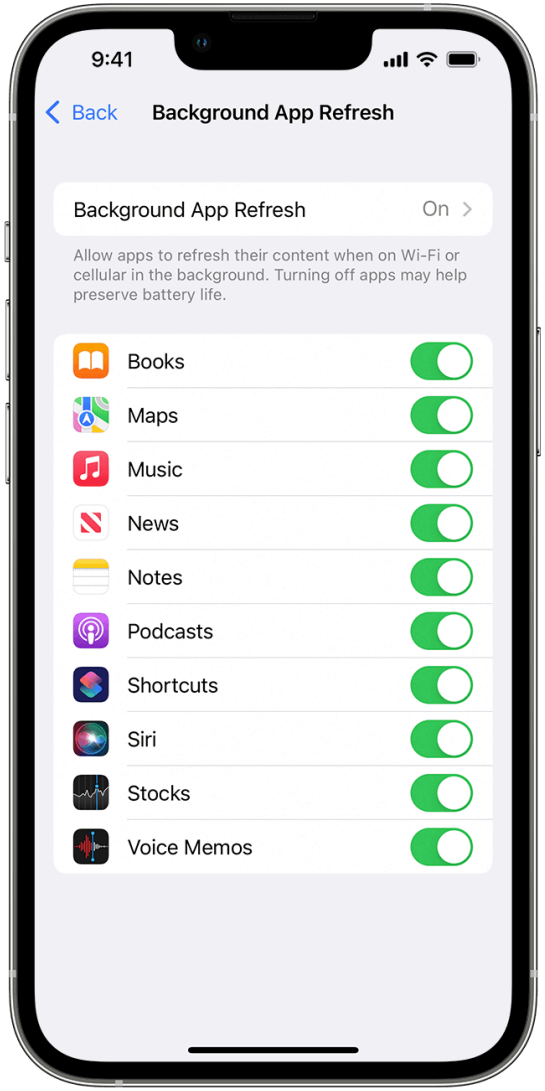
	 ; *see also* exemplary screen shots below:


8:03
33
Back
Background App Refresh
Off
Wi-Fi
Wi-Fi & Cellular Data

Claim	Public Documentation
	
[1i] classify whether a particular application capable of both interacting with the user in a user interface foreground of the device, and at least some Internet service activities when not interacting with the user in the device user interface foreground,	The Accused Instrumentalities "classify whether a particular application capable of both interacting with the user in a user interface foreground of the device, and at least some Internet service activities when not interacting with the user in the device user interface foreground." For example, Apple's devices, including the iPhone 15 Pro, sold and used by Verizon classify applications and internet service activities in both foreground and background. *See, e.g.*, https://www.verizon.com/support/data-usage-faqs/:

Claim	Public Documentation
	What is indirect or background data usage? ^ Indirect data usage occurs in the background, during tasks performed automatically by your device. Some examples of indirect data usage are: • Automatic backups of pictures or videos • Software updates • App content refreshes • Syncing and location services Note: You can adjust these functions in your device Settings. ; https://www.verizon.com/support/knowledge-base-207174/:

Claim	Public Documentation
	 Support › Apple › Apple iPhone 7 Plus **Apple iPhone - Turn Background App Refresh On / Off** **NOTE** When Background App Refresh is turned on, apps that take advantage of this feature can refresh themselves in the background. For additional info, refer to multitasking and background app refresh. 1. From a Home screen on your **Settings** › **General**. → If an app isn't available on your Home screen, swipe left to access the App Library. 2. Tap **Background App Refresh** twice then tap one of the following: → When low power mode is on, the background app refresh is disabled. • Off • Wi-Fi • Wi-Fi and Cellular Data https://support.apple.com/en-us/HT202070:

Claim	Public Documentation
	# Use Background App Refresh After you switch to a different app, some apps run for a short period of time before they're set to a suspended state. Apps that are in a suspended state aren't actively in use, open, or taking up system resources. With Background App Refresh, suspended apps can check for updates and new content. If you want suspended apps to check for new content, go to Settings > General > Background App Refresh and turn on Background App Refresh. If you quit an app from the app switcher, it might not be able to run or check for new content before you open it again.  https://support.apple.com/en-us/HT205234:

Use Low Power Mode to save battery life on your iPhone or iPad

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When Low Power Mode is on, your iPhone or iPad will last longer before you need to charge it, but some features might take longer to update or complete. Also, some tasks might not work until you turn off Low Power Mode, or until you charge your iPhone or iPad to 80% or higher.

Low Power Mode reduces or affects these features:

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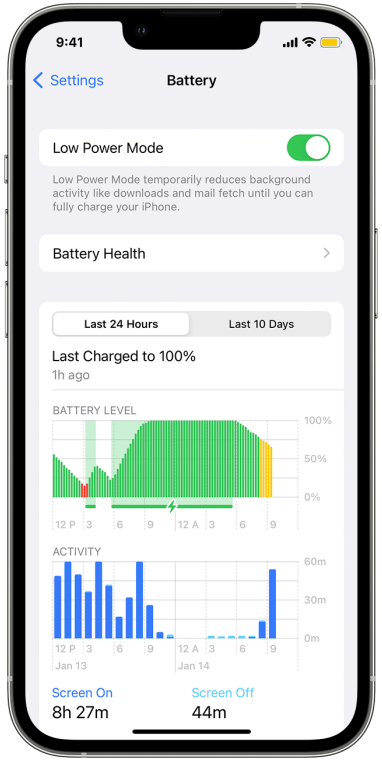

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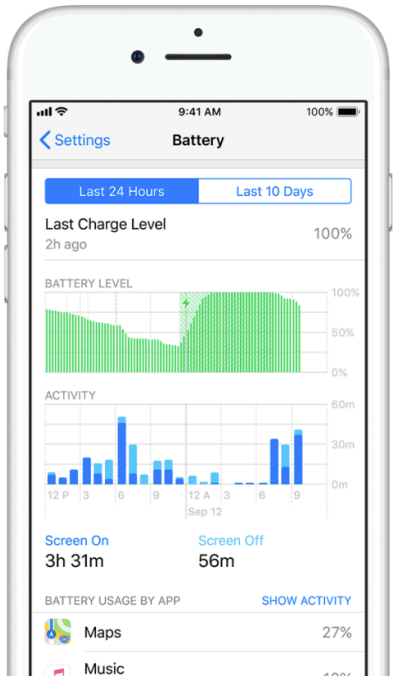
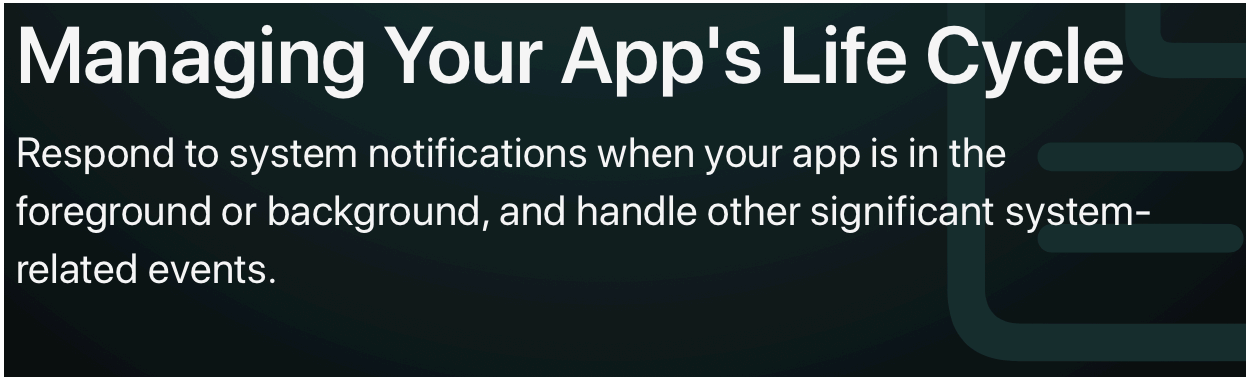
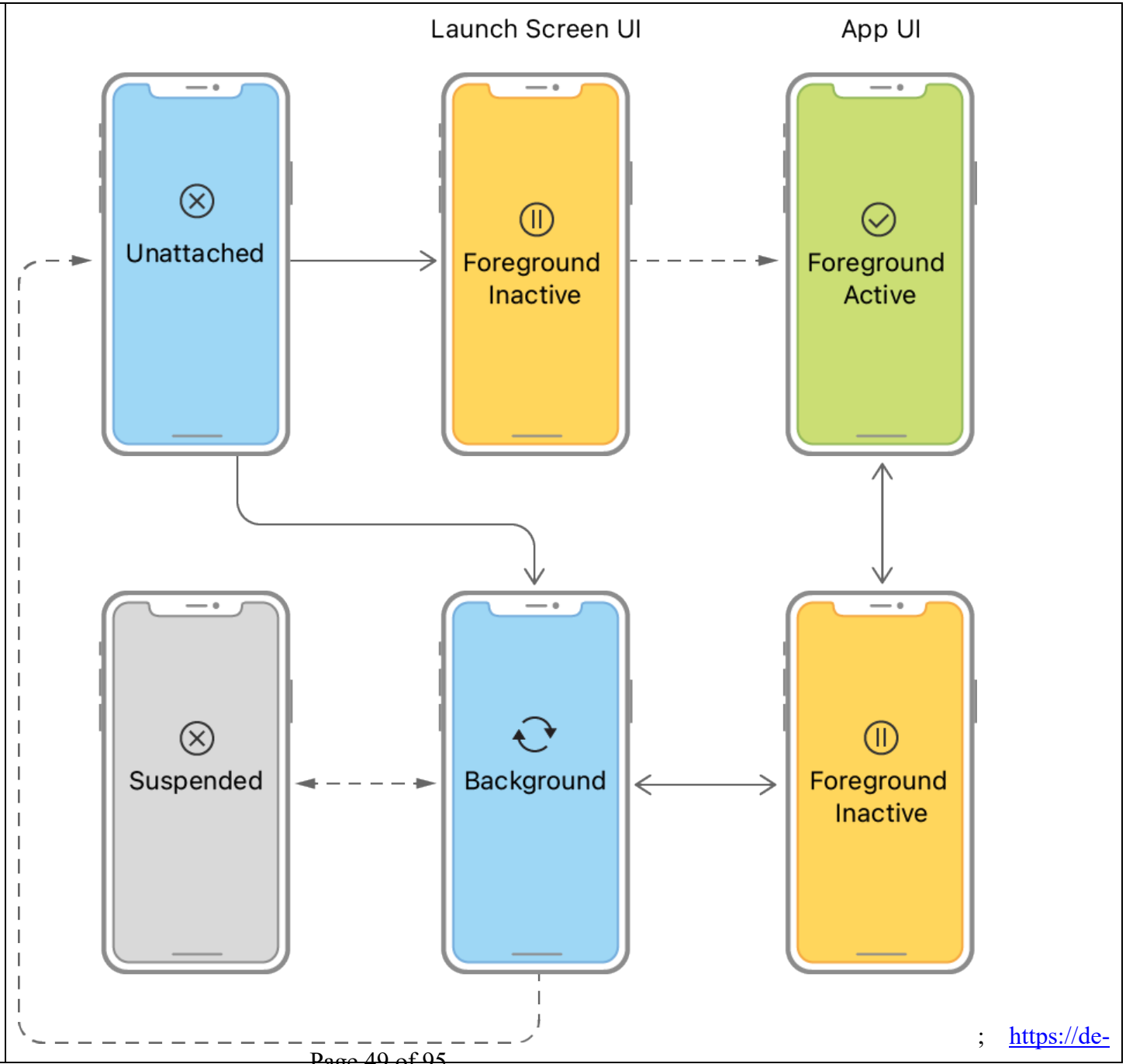
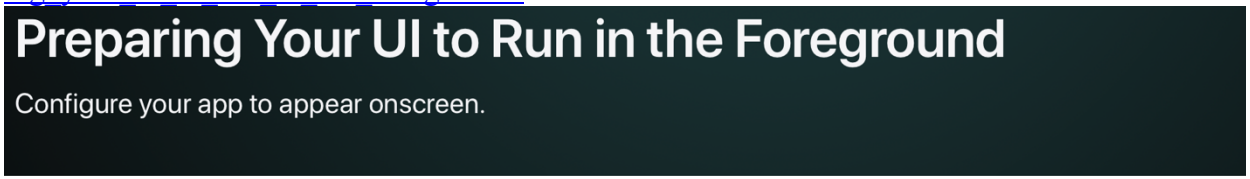
Claim	Public Documentation
	https://www.apple.com/batteries/maximizing-performance/: **View Battery Usage information** With iOS, you can easily manage your device's battery life, because you can see the proportion of your battery used by each app (unless the device is charging). To view your usage, go to Settings > Battery. Here are the messages you may see listed below the apps you've been using: **Background Activity.** This indicates that the battery was used by the app while it was in the background — that is, while you were using another app. • To improve battery life, you can turn off the feature that allows apps to refresh in the background. Go to Settings > General > Background App Refresh and select Wi-Fi, Wi-Fi & Cellular Data, or Off to turn off Background App Refresh entirely. • If the Mail app lists Background Activity, you can choose to fetch data manually or increase the fetch interval. Go to Settings > Accounts & Passwords > Fetch New Data.  ; https://developer.apple.com/documentation/uikit/uiapplication/1623003-applicationstate:

Claim	Public Documentation
	Instance Property **applicationState** The app's current state, or that of its most active scene. iOS 4.0+ iPadOS 4.0+ Mac Catalyst 13.1+ tvOS 9.0+ visionOS 1.0+ Beta `var applicationState: UIApplication.State { get }` **Discussion** The behavior of this property depends on whether your app is scene-based. In a scene-based app, this property takes the value of the most active scene, which it determines from each scene's `activationState` property. A scene-based app launches in the background state, and transitions between its states as scenes connect, change their states, and disconnect. For scene-based apps, use `UISceneDelegate` to respond to changes in an individual scene's life cycle. In a sceneless app, the property's value is always the app's current state. The app is inactive at launch, and then is generally in either an active or background state. The app may become inactive for a short period — for example, when transitioning between active and background states, when the system presents an alert in front of it, or when the system displays the application switcher. For sceneless apps, use `UIApplicationDelegate` to respond to the app's life cycle changes. ; https://developer.apple.com/documentation/uikit/app_and_environment/managing_your_app_s_life_cycle:

Claim	Public Documentation
	 ## Overview The current state of your app determines what it can and cannot do at any time. For example, a foreground app has the user's attention, so it has priority over system resources, including the CPU. By contrast, a background app must do as little work as possible, and preferably nothing, because it is offscreen. As your app changes from state to state, you must adjust its behavior accordingly.

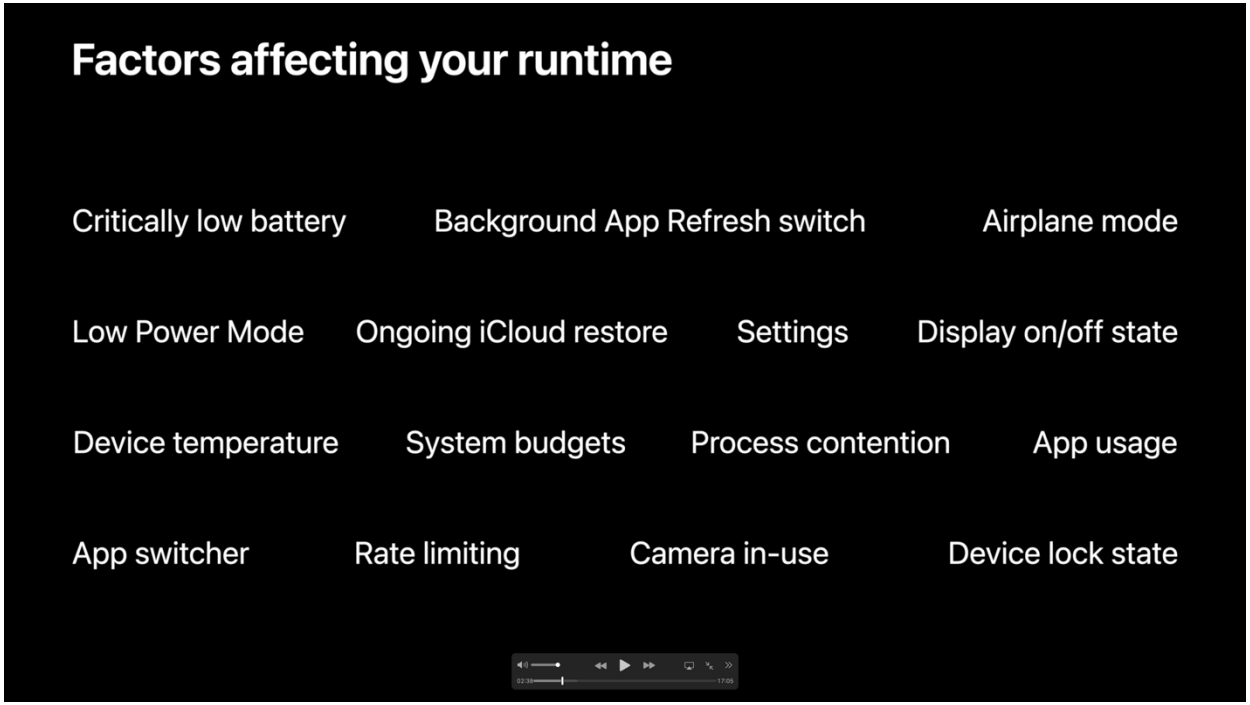

Launch Screen UI
App UI
Unattached
Foreground Inactive
Foreground Active
Suspended
Background
Foreground Inactive

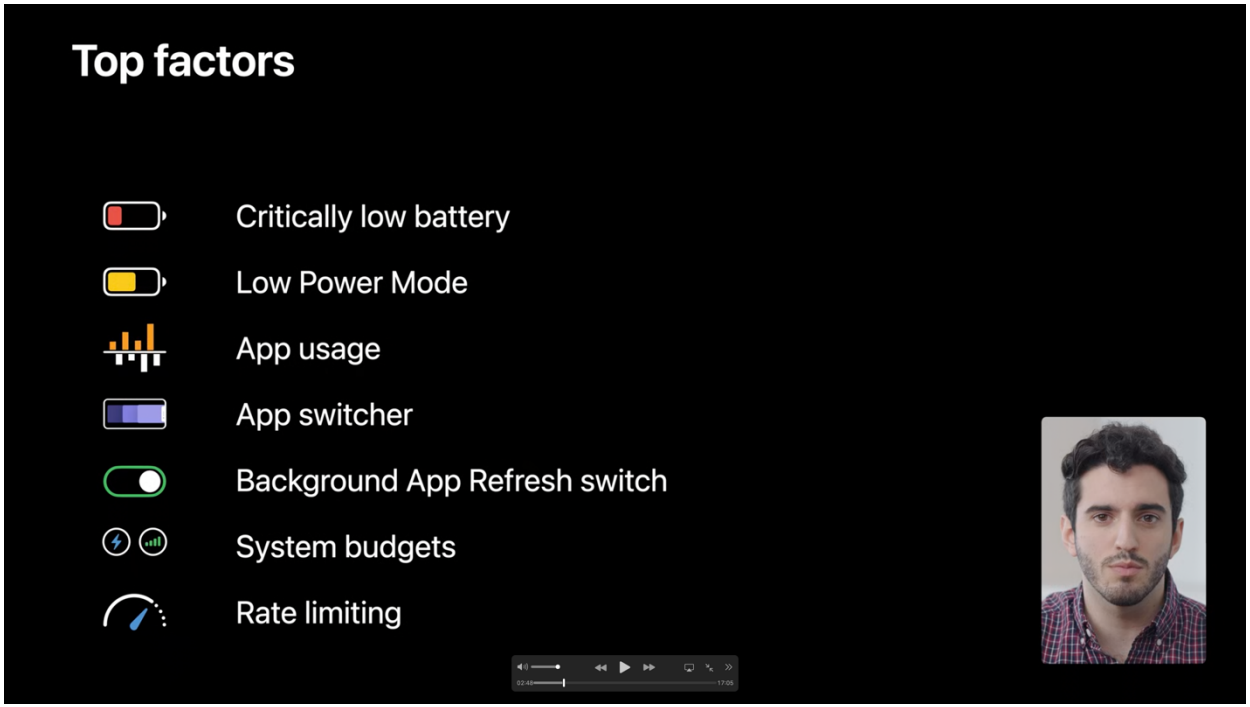
; https://de-

Claim	Public Documentation
	veloper.apple.com/documentation/uikit/windows_and_screens/scenes/preparing_your_ui_to_run_in_the_foreground/:  ## Overview Use foreground transitions to prepare your app's UI to appear onscreen. An app's transition to the foreground is usually in response to a user action. For example, when the user taps the app's icon, the system launches the app and brings it to the foreground. Use a foreground transition to update your app's UI, acquire resources, and start the services you need to handle user requests.

Claim	Public Documentation
	Configure Your User Interface and Initial Tasks at Activation The system moves your app to the active state immediately before displaying the app's UI. Activation is a good time to configure your app's UI and runtime behavior; specifically: • Show your app's windows, if needed. • Change the currently visible view controller, if needed. • Update the data values and state of views and controls. • Display controls to resume a paused game. • Start or resume any dispatch queues that you use to execute tasks. • Update data source objects. • Start timers for periodic tasks. Put your configuration code in one of the following methods: • For a scene-based UI—The `sceneDidBecomeActive(_:)` method of the appropriate scene delegate object. • For all other apps—The `applicationDidBecomeActive(_:)` method of your app delegate object. Activation is also the time to put finishing touches on your UI before displaying it to the user. Don't run any code that might block your activation method. Instead, make sure you have everything you need in advance. For example, if your data changes frequently outside of the app, use background tasks to fetch updates from the network before your app returns to the foreground. Otherwise, be prepared to display existing data while you fetch changes asynchronously. https://developer.apple.com/documentation/uikit/windows_and_screens/scenes/preparing_your_ui_to_run_in_the_background/; https://developer.apple.com/documentation/uikit/app_and_environment/scenes/preparing_your_ui_to_run_in_the_background/about_the_background_execution_sequence/; https://developer.apple.com/documentation/uikit/app_and_environment/scenes/preparing_your_ui_to_run_in_the_background/extending_your_app_s_background_execution_time/; https://developer.apple.com/documentation/backgroundtasks/; https://developer.apple.com/documentation/watchkit/background_execution/using_background_tasks/; https://developer.apple.com/documentation/uikit/windows_and_screens/scenes/prepar-

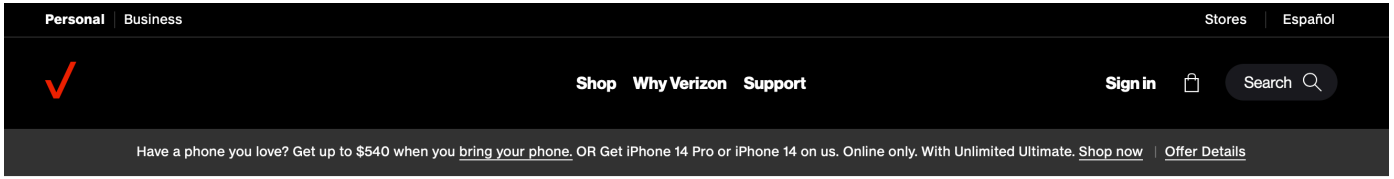
Claim	Public Documentation
	ing_your_ui_to_run_in_the_background/using_background_tasks_to_update_your_app/; https://developer.apple.com/documentation/backgroundtasks/refreshing_and_maintaining_your_app_using_background_tasks/; https://developer.apple.com/documentation/backgroundtasks https://developer.apple.com/documentation/backgroundtasks/bgapprefreshtask; https://developer.apple.com/documentation/backgroundtasks/bgprocessingtask; https://developer.apple.com/documentation/backgroundtasks/bgtask; https://developer.apple.com/documentation/uikit/uiapplication/1622976-backgroundfetchintervalminimum/; https://developer.apple.com/documentation/uikit/uiapplication/1622994-backgroundrefreshstatus/; https://developer.apple.com/documentation/uikit/windows_and_screens/scenes/preparing_your_ui_to_run_in_the_foreground/; https://developer.apple.com/documentation/uikit/uiapplication/1623003-applicationstate; https://developer.apple.com/documentation/uikit/uiapplication/state; https://developer.apple.com/documentation/foundation/url_loading_system; https://developer.apple.com/documentation/foundation/urlsession; https://developer.apple.com/documentation/avfoundation/avplayer; https://developer.apple.com/documentation/avfoundation/media_playback/configuring_your_app_for_media_playback; https://developer.apple.com/videos/play/wwdc2019/707/; https://developer.apple.com/videos/play/wwdc2020/10063:

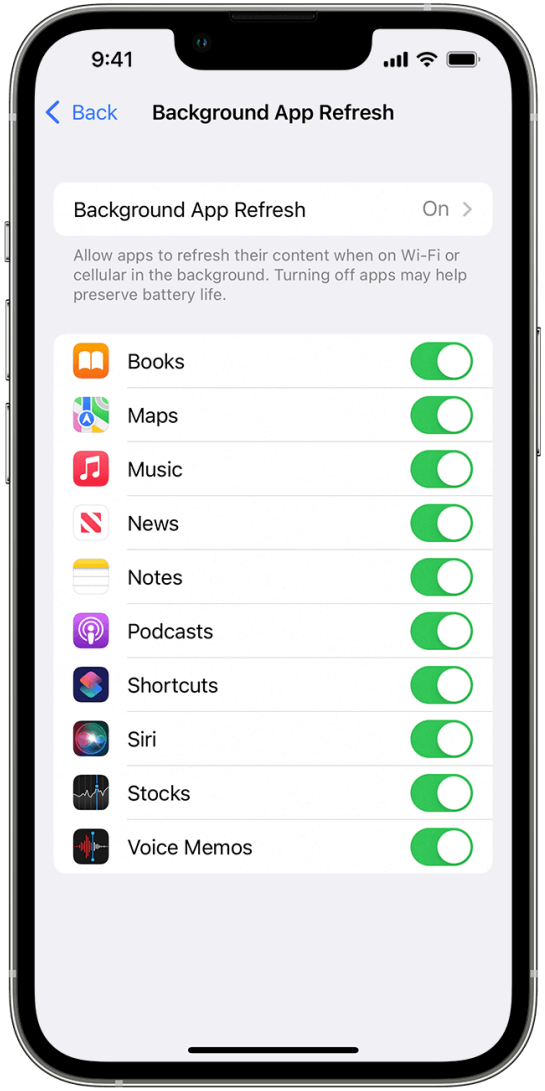
Claim	Public Documentation
	


Top factors
Critically low battery
Low Power Mode
App usage
App switcher
Background App Refresh switch
System budgets
Rate limiting

Claim	Public Documentation
	
[1j] is interacting with the user in the device user interface foreground, and	The Accused Instrumentalities comprise one or more applications "interacting with the user in the device user interface foreground." For example, Apple's devices, including the iPhone 15 Pro, sold and used by Verizon classify applications and internet service activities in both foreground and background. *See, e.g.*, https://www.verizon.com/support/data-usage-faqs/:

Claim	Public Documentation
	What is indirect or background data usage? ^ Indirect data usage occurs in the background, during tasks performed automatically by your device. Some examples of indirect data usage are: • Automatic backups of pictures or videos • Software updates • App content refreshes • Syncing and location services Note: You can adjust these functions in your device Settings. ; https://www.verizon.com/support/knowledge-base-207174/:

Claim	Public Documentation
	 Support › Apple › Apple iPhone 7 Plus **Apple iPhone - Turn Background App Refresh On / Off** **NOTE** When Background App Refresh is turned on, apps that take advantage of this feature can refresh themselves in the background. For additional info, refer to multitasking and background app refresh. 1. From a Home screen on your **Settings** › **General**. → If an app isn't available on your Home screen, swipe left to access the App Library. 2. Tap **Background App Refresh** twice then tap one of the following: → When low power mode is on, the background app refresh is disabled. • Off • Wi-Fi • Wi-Fi and Cellular Data https://support.apple.com/en-us/HT202070:

Claim	Public Documentation
	 ## Use Background App Refresh After you switch to a different app, some apps run for a short period of time before they're set to a suspended state. Apps that are in a suspended state aren't actively in use, open, or taking up system resources. With Background App Refresh, suspended apps can check for updates and new content. If you want suspended apps to check for new content, go to Settings > General > Background App Refresh and turn on Background App Refresh. If you quit an app from the app switcher, it might not be able to run or check for new content before you open it again. https://support.apple.com/en-us/HT205234:

Use Low Power Mode to save battery life on your iPhone or iPad

Low Power Mode reduces the amount of power that your iPhone or iPad uses when the battery gets low.

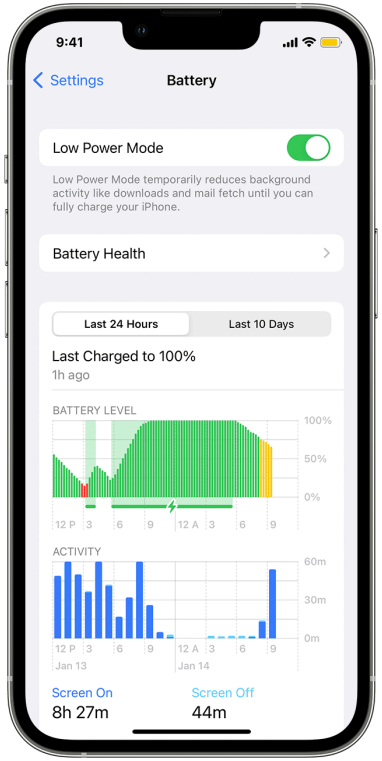
To turn Low Power Mode on or off, go to Settings > Battery. You can also turn Low Power Mode on and off from Control Center. Go to Settings > Control Center > Customize Controls, then select Low Power Mode to add it to Control Center.

When Low Power Mode is on, your iPhone or iPad will last longer before you need to charge it, but some features might take longer to update or complete. Also, some tasks might not work until you turn off Low Power Mode, or until you charge your iPhone or iPad to 80% or higher.

Low Power Mode reduces or affects these features:

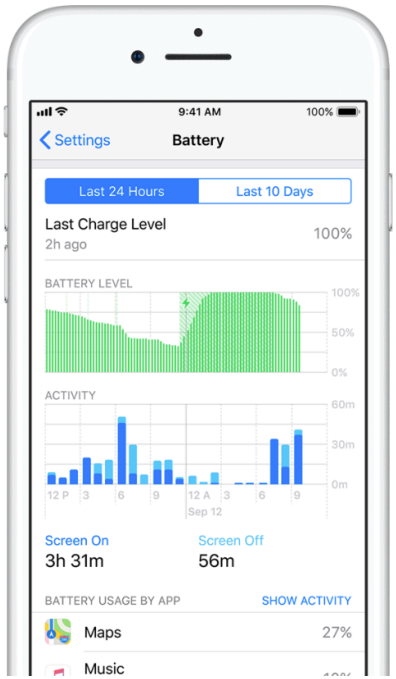
- 5G (except for video streaming) on iPhone 12 and iPhone 13 models[1]
- Auto-Lock (defaults to 30 seconds)
- Display brightness
- Display refresh rate (limited up to 60 Hz) on iPhone and iPad models with ProMotion display[2]
- Some visual effects
- iCloud Photos (temporarily paused)
- Automatic downloads
- Email fetch
- Background app refresh

When Low Power Mode is on, the battery in the status bar will be yellow. You'll see a yellow battery icon and the battery percentage. After you charge your iPhone or iPad to 80% or higher, Low Power Mode automatically turns off.



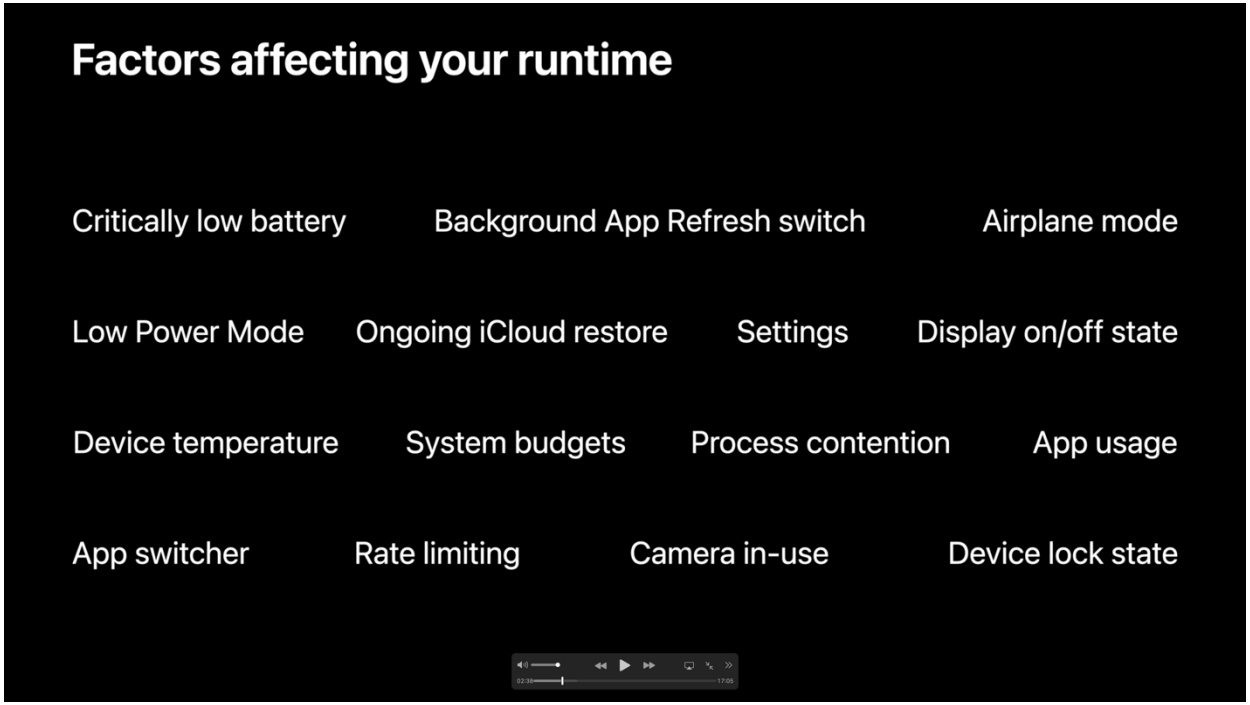
1. If you turn on Low Power Mode, 5G is disabled, except in some cases like video streaming and large downloads on iPhone 12 and iPhone 13 models. With iPhone 12 models, Low Power Mode disables 5G standalone (where available).

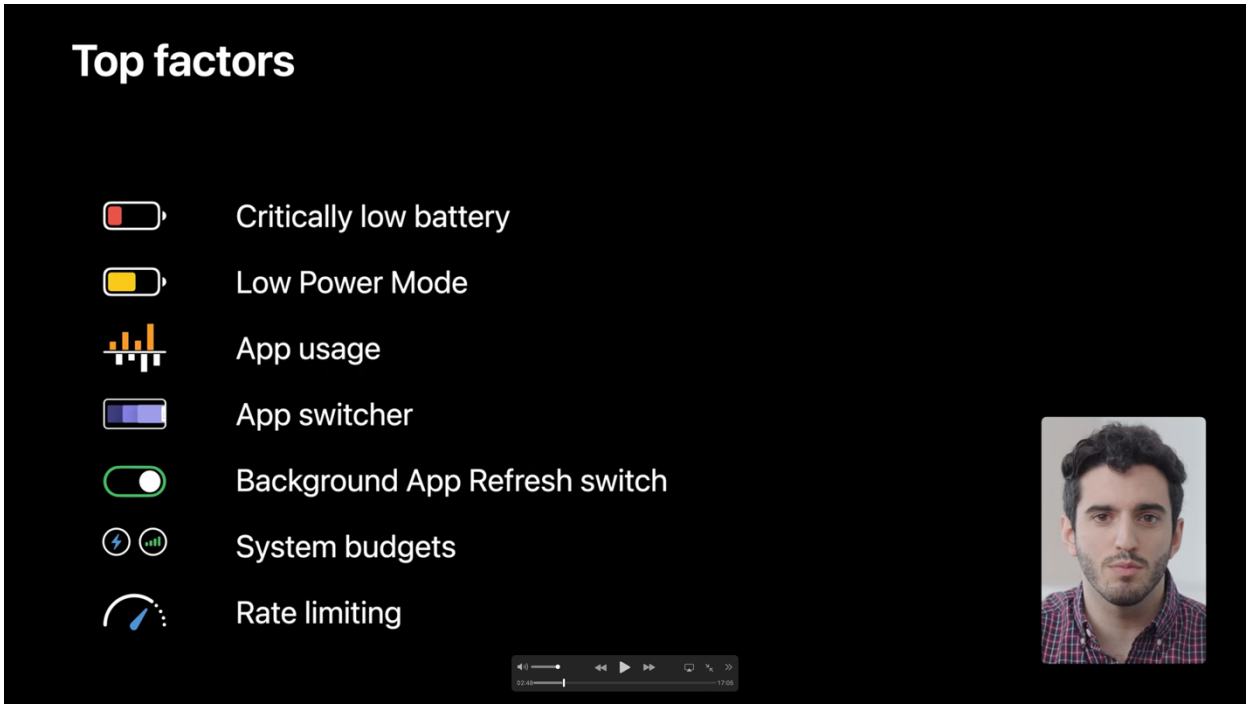
2. These devices have ProMotion display: iPhone 13 Pro and later, iPhone 13 Pro Max and later, iPad Pro 10.5-inch, all iPad Pro 11-inch models, and iPad Pro 12.9-inch (2nd generation) and later.

Claim	Public Documentation
	https://www.apple.com/batteries/maximizing-performance/: **View Battery Usage information** With iOS, you can easily manage your device's battery life, because you can see the proportion of your battery used by each app (unless the device is charging). To view your usage, go to Settings > Battery. Here are the messages you may see listed below the apps you've been using: **Background Activity.** This indicates that the battery was used by the app while it was in the background — that is, while you were using another app. • To improve battery life, you can turn off the feature that allows apps to refresh in the background. Go to Settings > General > Background App Refresh and select Wi-Fi, Wi-Fi & Cellular Data, or Off to turn off Background App Refresh entirely. • If the Mail app lists Background Activity, you can choose to fetch data manually or increase the fetch interval. Go to Settings > Accounts & Passwords > Fetch New Data.  ; https://developer.apple.com/documentation/uikit/uiapplication/1623003-applicationstate:

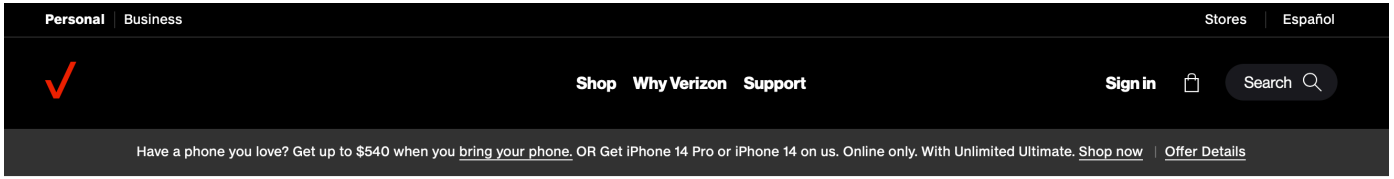
Claim	Public Documentation
	Instance Property **applicationState** The app's current state, or that of its most active scene. iOS 4.0+ iPadOS 4.0+ Mac Catalyst 13.1+ tvOS 9.0+ visionOS 1.0+ Beta `var applicationState: UIApplication.State { get }` **Discussion** The behavior of this property depends on whether your app is scene-based. In a scene-based app, this property takes the value of the most active scene, which it determines from each scene's `activationState` property. A scene-based app launches in the background state, and transitions between its states as scenes connect, change their states, and disconnect. For scene-based apps, use `UISceneDelegate` to respond to changes in an individual scene's life cycle. In a sceneless app, the property's value is always the app's current state. The app is inactive at launch, and then is generally in either an active or background state. The app may become inactive for a short period — for example, when transitioning between active and background states, when the system presents an alert in front of it, or when the system displays the application switcher. For sceneless apps, use `UIApplicationDelegate` to respond to the app's life cycle changes. ; https://developer.apple.com/documentation/uikit/windows_and_screens/scenes/preparing_your_ui_to_run_in_the_background/; https://developer.apple.com/documentation/uikit/app_and_environment/scenes/preparing_your_ui_to_run_in_the_background/about_the_background_execution_sequence/; https://developer.apple.com/documentation/uikit/app_and_environment/scenes/preparing_your_ui_to_run_in_the_background/extending_your_app_s_background_execution_time/; https://developer.apple.com/documentation/backgroundtasks/;

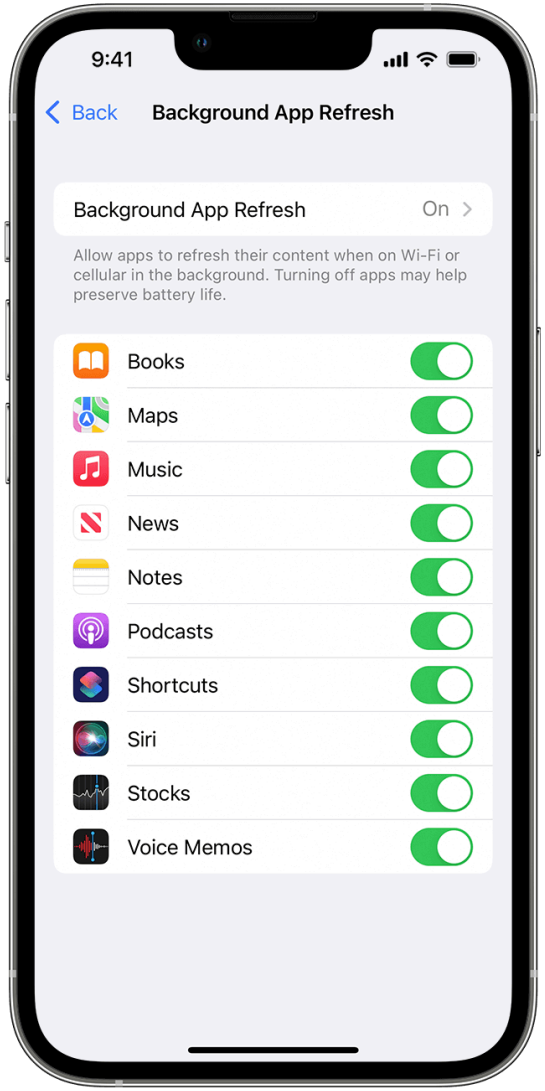
Claim	Public Documentation
	https://developer.apple.com/documentation/watchkit/background_execution/using_background_tasks/; https://developer.apple.com/documentation/uikit/windows_and_screens/scenes/preparing_your_ui_to_run_in_the_background/using_background_tasks_to_update_your_app/; https://developer.apple.com/documentation/backgroundtasks/refreshing_and_maintaining_your_app_using_background_tasks/; https://developer.apple.com/documentation/backgroundtasks https://developer.apple.com/documentation/backgroundtasks/bgapprefreshtask; https://developer.apple.com/documentation/backgroundtasks/bgprocessingtask; https://developer.apple.com/documentation/backgroundtasks/bgtask; https://developer.apple.com/documentation/uikit/uiapplication/1622976-backgroundfetchintervalminimum/; https://developer.apple.com/documentation/uikit/uiapplication/1622994-backgroundrefreshstatus/; https://developer.apple.com/documentation/uikit/windows_and_screens/scenes/preparing_your_ui_to_run_in_the_foreground/; https://developer.apple.com/documentation/uikit/uiapplication/1623003-applicationstate; https://developer.apple.com/documentation/uikit/uiapplication/state; https://developer.apple.com/documentation/foundation/url_loading_system; https://developer.apple.com/documentation/foundation/urlsession; https://developer.apple.com/documentation/avfoundation/avplayer; https://developer.apple.com/documentation/avfoundation/media_playback/configuring_your_app_for_media_playback; https://developer.apple.com/videos/play/wwdc2019/707/; https://developer.apple.com/videos/play/wwdc2020/10063:

Claim	Public Documentation
	


Top factors
Critically low battery
Low Power Mode
App usage
App switcher
Background App Refresh switch
System budgets
Rate limiting

Claim	Public Documentation
	
[1k] selectively allow or deny one or more Internet service activities by or on behalf of the particular application based on whether or not the particular application is one of the first one or more applications, the differential traffic control policy, including any applicable user augmentation of the differential traffic control policy, and the classifications performed by the one or more processors.	The Accused Instrumentalities "selectively allow or deny one or more Internet service activities by or on behalf of the particular application based on whether or not the particular application is one of the first one or more applications, the differential traffic control policy, including any applicable user augmentation of the differential traffic control policy, and the classifications performed by the one or more processors." For example, Apple's devices, including the iPhone 15 Pro, sold and used by Verizon allow or deny internet service activities by or on behalf of applications based on classifications of particular applications and policies.. *See, e.g.*, https://www.verizon.com/support/knowledge-base-207174/:

Claim	Public Documentation
	 Support › Apple › Apple iPhone 7 Plus **Apple iPhone - Turn Background App Refresh On / Off** **NOTE** When Background App Refresh is turned on, apps that take advantage of this feature can refresh themselves in the background. For additional info, refer to multitasking and background app refresh. 1. From a Home screen on your **Settings** › **General**. → If an app isn't available on your Home screen, swipe left to access the App Library. 2. Tap **Background App Refresh** twice then tap one of the following: → When low power mode is on, the background app refresh is disabled. • Off • Wi-Fi • Wi-Fi and Cellular Data https://support.apple.com/en-us/HT202070:

Claim	Public Documentation
	 ## Use Background App Refresh After you switch to a different app, some apps run for a short period of time before they're set to a suspended state. Apps that are in a suspended state aren't actively in use, open, or taking up system resources. With Background App Refresh, suspended apps can check for updates and new content. If you want suspended apps to check for new content, go to Settings > General > Background App Refresh and turn on Background App Refresh. If you quit an app from the app switcher, it might not be able to run or check for new content before you open it again. https://support.apple.com/en-us/HT205234:

Use Low Power Mode to save battery life on your iPhone or iPad

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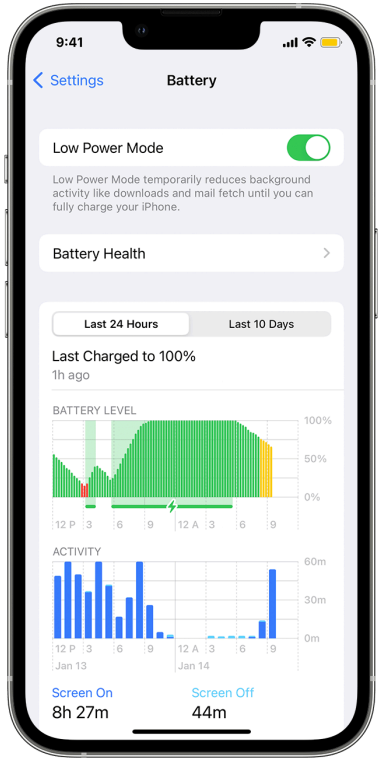
To turn Low Power Mode on or off, go to Settings > Battery. You can also turn Low Power Mode on and off from Control Center. Go to Settings > Control Center > Customize Controls, then select Low Power Mode to add it to Control Center.

When Low Power Mode is on, your iPhone or iPad will last longer before you need to charge it, but some features might take longer to update or complete. Also, some tasks might not work until you turn off Low Power Mode, or until you charge your iPhone or iPad to 80% or higher.

Low Power Mode reduces or affects these features:

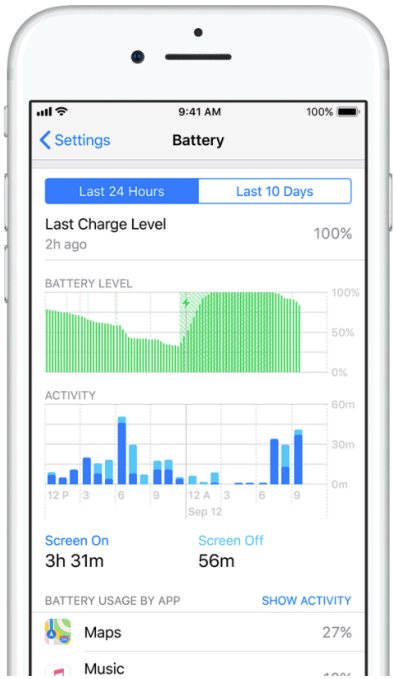
- 5G (except for video streaming) on iPhone 12 and iPhone 13 models[1]
- Auto-Lock (defaults to 30 seconds)
- Display brightness
- Display refresh rate (limited up to 60 Hz) on iPhone and iPad models with ProMotion display[2]
- Some visual effects
- iCloud Photos (temporarily paused)
- Automatic downloads
- Email fetch
- Background app refresh

When Low Power Mode is on, the battery in the status bar will be yellow. You'll see a yellow battery icon and the battery percentage. After you charge your iPhone or iPad to 80% or higher, Low Power Mode automatically turns off.

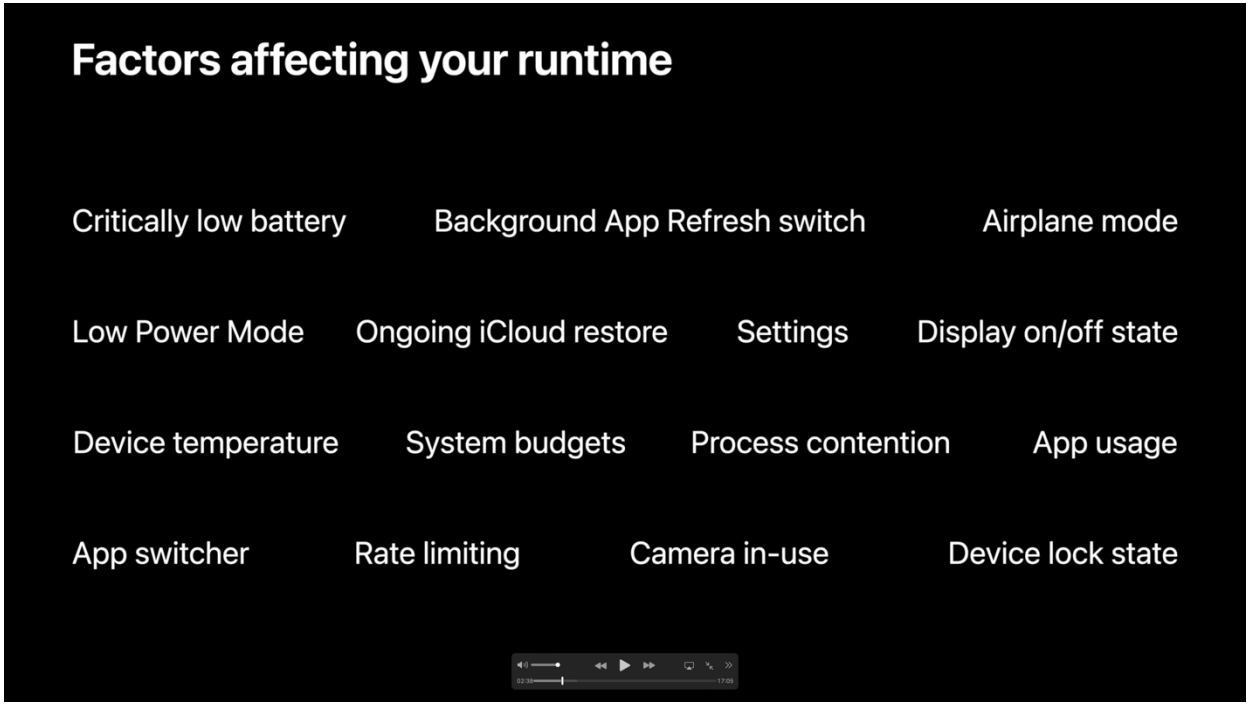


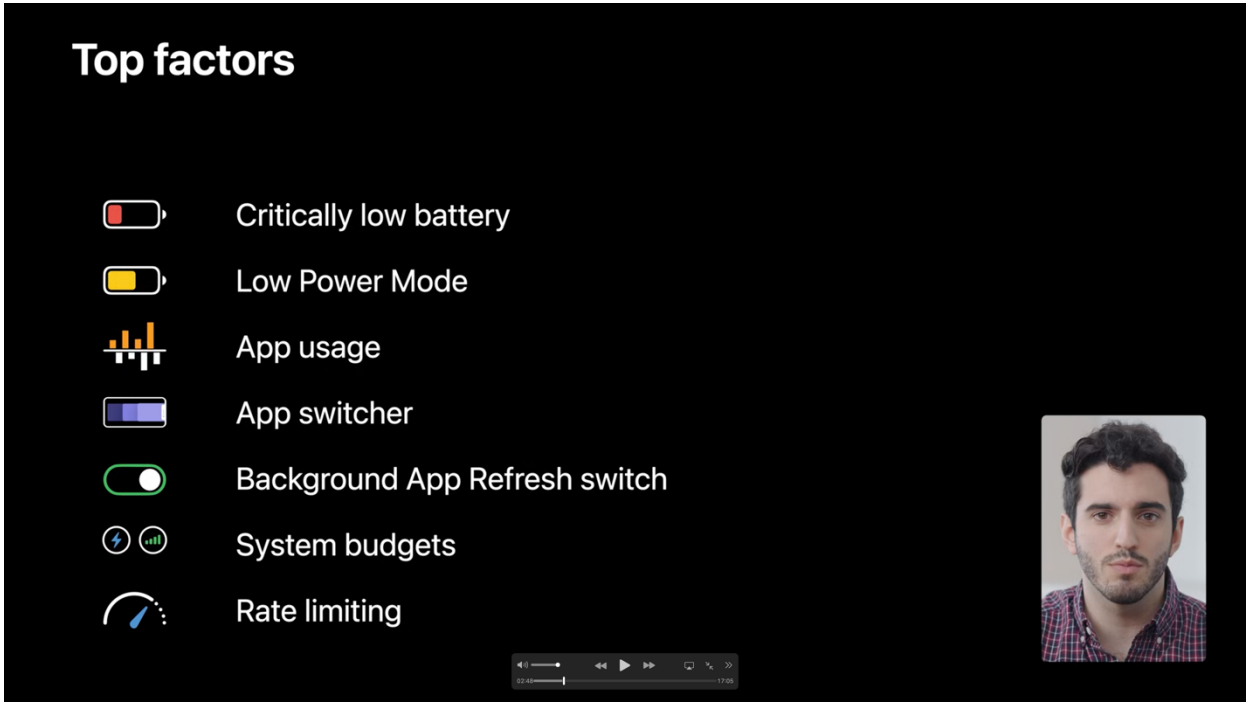
1. If you turn on Low Power Mode, 5G is disabled, except in some cases like video streaming and large downloads on iPhone 12 and iPhone 13 models. With iPhone 12 models, Low Power Mode disables 5G standalone (where available).

2. These devices have ProMotion display: iPhone 13 Pro and later, iPhone 13 Pro Max and later, iPad Pro 10.5-inch, all iPad Pro 11-inch models, and iPad Pro 12.9-inch (2nd generation) and later.

Claim	Public Documentation
	https://www.apple.com/batteries/maximizing-performance/: **View Battery Usage information** With iOS, you can easily manage your device's battery life, because you can see the proportion of your battery used by each app (unless the device is charging). To view your usage, go to Settings > Battery. Here are the messages you may see listed below the apps you've been using: **Background Activity.** This indicates that the battery was used by the app while it was in the background — that is, while you were using another app. • To improve battery life, you can turn off the feature that allows apps to refresh in the background. Go to Settings > General > Background App Refresh and select Wi-Fi, Wi-Fi & Cellular Data, or Off to turn off Background App Refresh entirely. • If the Mail app lists Background Activity, you can choose to fetch data manually or increase the fetch interval. Go to Settings > Accounts & Passwords > Fetch New Data.  ; https://developer.apple.com/documentation/uikit/uiapplication/1623003-applicationstate; https://developer.apple.com/documentation/uikit/windows_and_screens/scenes/preparing_your_ui_to_run_in_the_background/; https://developer.apple.com/documentation/uikit/app_and_environment/scenes/preparing_your_ui_to_run_in_the_background/about_the_background_execution_sequence/; https://developer.apple.com/documentation/uikit/app_and_environment/scenes/preparing_your_ui_to_run_in_the_background/extending_your_app_s_background_execution_time/; https://developer.apple.com/documentation/backgroundtasks/; https://developer.apple.com/documentation/watchkit/background_execution/using_background_tasks/;

Claim	Public Documentation
	https://developer.apple.com/documentation/uikit/windows_and_screens/scenes/preparing_your_ui_to_run_in_the_background/using_background_tasks_to_update_your_app/; https://developer.apple.com/documentation/backgroundtasks/refreshing_and_maintaining_your_app_using_background_tasks/; https://developer.apple.com/documentation/backgroundtasks https://developer.apple.com/documentation/backgroundtasks/bgapprefreshtask; https://developer.apple.com/documentation/backgroundtasks/bgprocessingtask; https://developer.apple.com/documentation/backgroundtasks/bgtask; https://developer.apple.com/documentation/uikit/uiapplication/1622976-backgroundfetchintervalminimum/; https://developer.apple.com/documentation/uikit/uiapplication/1622994-backgroundrefreshstatus/; https://developer.apple.com/documentation/uikit/uiapplication/1623003-applicationstate; https://developer.apple.com/documentation/uikit/uiapplication/state; https://developer.apple.com/documentation/foundation/url_loading_system; https://developer.apple.com/documentation/foundation/urlsession; https://developer.apple.com/documentation/avfoundation/avplayer; https://developer.apple.com/documentation/avfoundation/media_playback/configuring_your_app_for_media_playback; https://developer.apple.com/videos/play/wwdc2019/707/; https://developer.apple.com/videos/play/wwdc2020/10063:

Claim	Public Documentation
	

Claim	Public Documentation
	

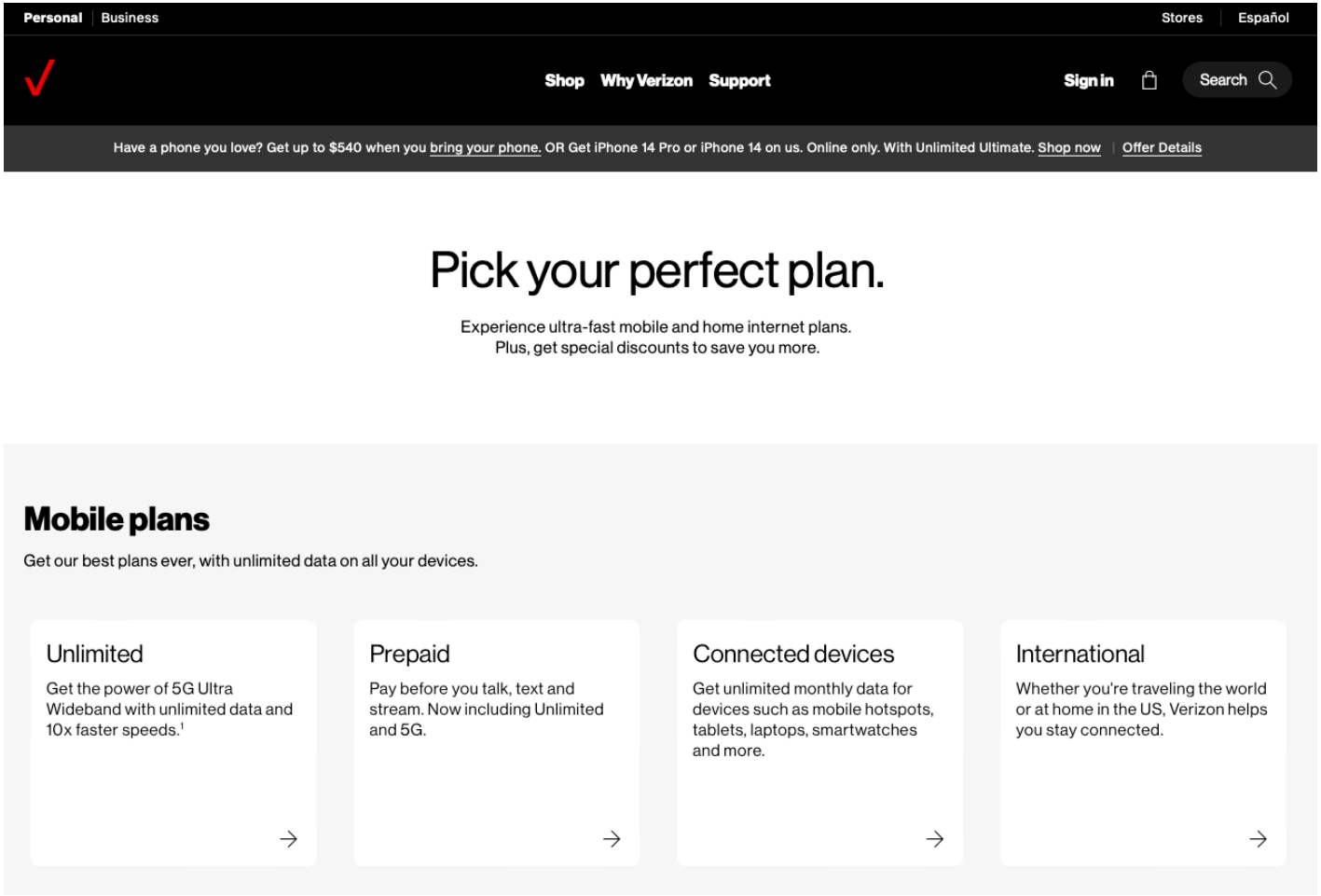
Claim	Public Documentation
	 ; *see also, e.g.,* https://www.verizon.com/plans/; https://www.verizon.com/business/products/plans/; https://www.verizon.com/business/products/security/mobile-device-endpoint-security/mobile-device-management/mdm-device-enrollment-programs/; https://www.verizon.com/solutions-and-services/add-ons/safety/verizon-smart-family; https://www.verizon.com/support/knowledge-base-206963/; https://www.verizon.com/support/knowledge-base-152696/; https://www.verizon.com/support/verizon-smart-family-faqs/.
2. The wireless end-user device of claim 1, wherein based on the differential traffic control policy the one or more processors selectively deny one or more Internet service activities by or on behalf of the particular application when the particular application is one of the	The Accused Instrumentalities comprise "[t]he wireless end-user device of claim 1, wherein based on the differential traffic control policy the one or more processors selectively deny one or more Internet service activities by or on behalf of the particular application when the particular application is one of the first one or more applications, the classified wireless network is a WWAN type, and the particular application is classified as not interacting with the user in the device user interface foreground." *See*, for example, the disclosures identified for claim 1.

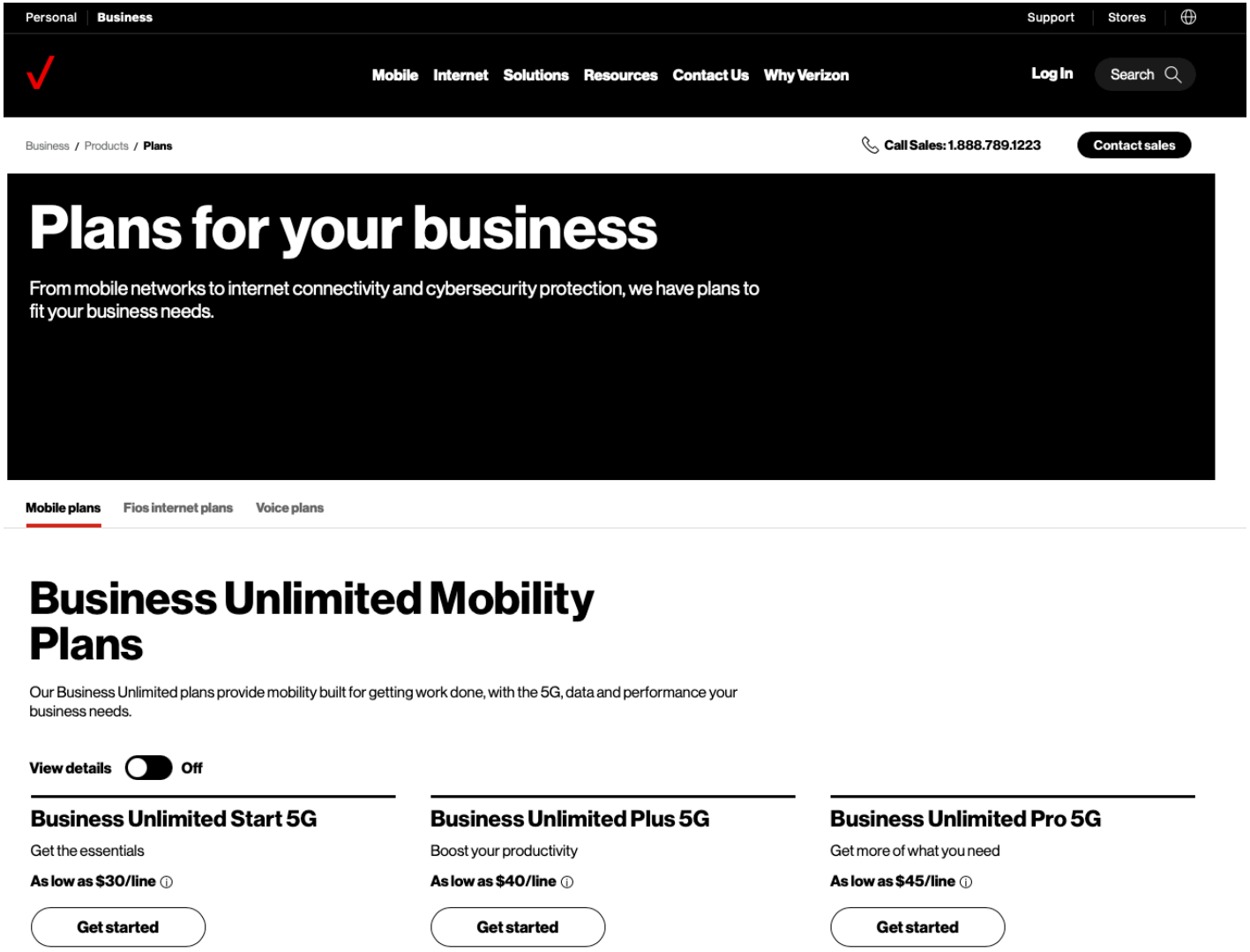
Claim	Public Documentation
first one or more applications, the classified wireless network is a WWAN type, and the particular application is classified as not interacting with the user in the device user interface foreground.	
3. The wireless end-user device of claim 2, wherein the one or more processors are further configured to override the selective denial of one or more Internet service activities by or on behalf of the particular application when the user has augmented the differential traffic control policy so as to indicate that Internet service activities are allowable when the classified wireless network is the WWAN type, and the particular application is classified as not interacting with the user in the device user interface foreground.	The Accused Instrumentalities comprise "[t]he wireless end-user device of claim 2, wherein the one or more processors are further configured to override the selective denial of one or more Internet service activities by or on behalf of the particular application when the user has augmented the differential traffic control policy so as to indicate that Internet service activities are allowable when the classified wireless network is the WWAN type, and the particular application is classified as not interacting with the user in the device user interface foreground." *See*, for example, the disclosures identified for claims 1-2.
4. The wireless end-user device of claim 2, wherein based on the differential traffic control policy the one or more processors selectively allow one or more Internet service activities by or on behalf of the particular application when the particular application is one of the first one or more applications, the	The Accused Instrumentalities comprise "[t]he wireless end-user device of claim 2, wherein based on the differential traffic control policy the one or more processors selectively allow one or more Internet service activities by or on behalf of the particular application when the particular application is one of the first one or more applications, the classified wireless network is the WWAN type, and the particular application is classified as interacting with the user in the device user interface foreground." *See*, for example, the disclosures identified for claims 1-2.

Claim	Public Documentation
classified wireless network is the WWAN type, and the particular application is classified as interacting with the user in the device user interface foreground.	
5. The wireless end-user device of claim 1, wherein based on the differential traffic control policy the one or more processors selectively allow one or more Internet service activities by or on behalf of a second particular application and/or service when the second particular application and/or service is one of the second one or more applications and/or services and the classified wireless network is the WWAN type.	The Accused Instrumentalities comprise "[t]he wireless end-user device of claim 1, wherein based on the differential traffic control policy the one or more processors selectively allow one or more Internet service activities by or on behalf of a second particular application and/or service when the second particular application and/or service is one of the second one or more applications and/or services and the classified wireless network is the WWAN type." *See*, for example, the disclosures identified for claim 1.
6. The wireless end-user device of claim 1, wherein the one or more processors are configured to classify that the particular application is interacting with the user in the device user interface foreground when the user of the device is directly interacting with that application or perceiving any benefit from that application.	The Accused Instrumentalities comprise "[t]he wireless end-user device of claim 1, wherein the one or more processors are configured to classify that the particular application is interacting with the user in the device user interface foreground when the user of the device is directly interacting with that application or perceiving any benefit from that application." *See*, for example, the disclosures identified for claim 1.

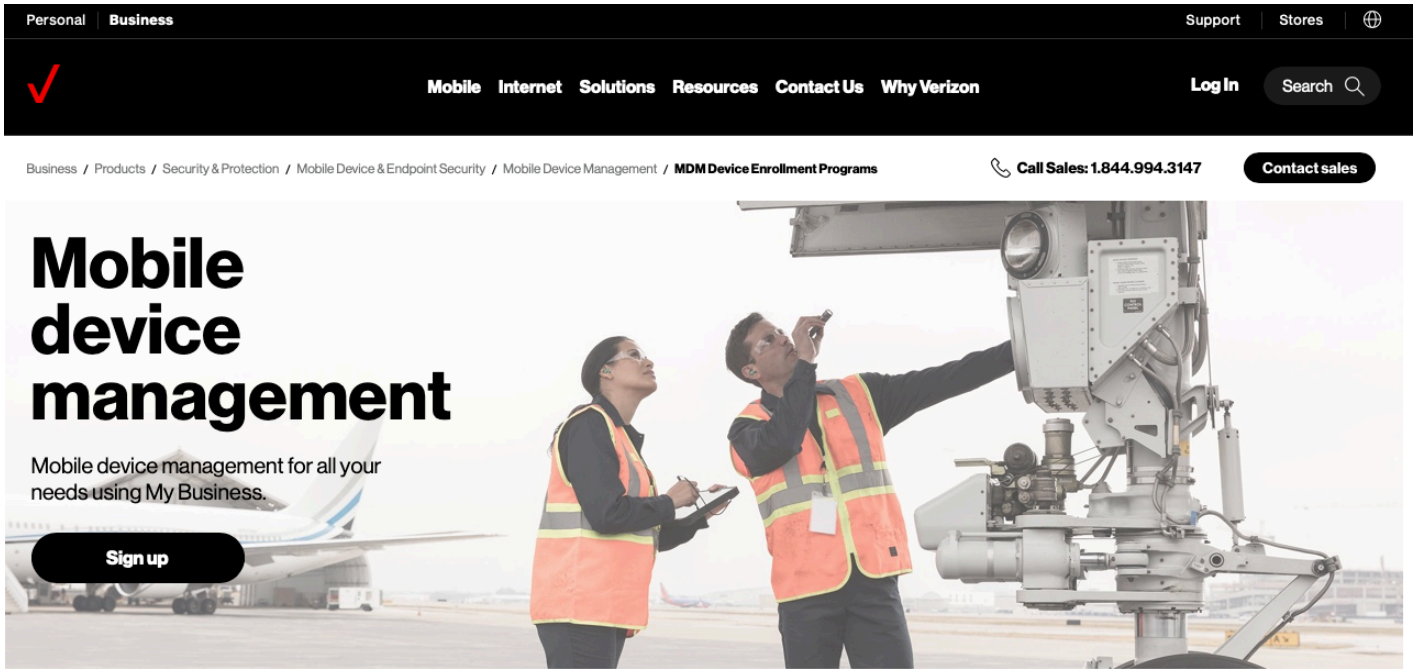
Claim	Public Documentation
7. The wireless end-user device of claim 1, wherein the user interface is further to provide the user of the device with information regarding why the differential traffic control policy is applied to the particular application.	The Accused Instrumentalities comprise "[t]he wireless end-user device of claim 1, wherein the user interface is further to provide the user of the device with information regarding why the differential traffic control policy is applied to the particular application." *See*, for example, the disclosures identified for claim 1.
8. The wireless end-user device of claim 1, wherein the differential traffic control policy is part of a multimode profile having different policies for different ones of the network types.	The Accused Instrumentalities comprise "[t]he wireless end-user device of claim 1, wherein the differential traffic control policy is part of a multimode profile having different policies for different ones of the network types." *See*, for example, the disclosures identified for claim 1.
9. The wireless end-user device of claim 8, wherein the one or more processors are further configured to select a traffic control policy from the multimode profile based at least in part on the classified wireless network type.	The Accused Instrumentalities comprise "[t]he wireless end-user device of claim 8, wherein the one or more processors are further configured to select a traffic control policy from the multimode profile based at least in part on the classified wireless network type." *See*, for example, the disclosures identified for claims 1 and 8.
10. The wireless end-user device of claim 9, wherein the one or more processors are further configured to, when the classified wireless network type is at least one type of WLAN, select the traffic control policy from the multimode profile based at least in part on a type of network connection from the WLAN to the Internet.	The Accused Instrumentalities comprise "[t]he wireless end-user device of claim 9, wherein the one or more processors are further configured to, when the classified wireless network type is at least one type of WLAN, select the traffic control policy from the multimode profile based at least in part on a type of network connection from the WLAN to the Internet." *See*, for example, the disclosures identified for claim 1 and 9.

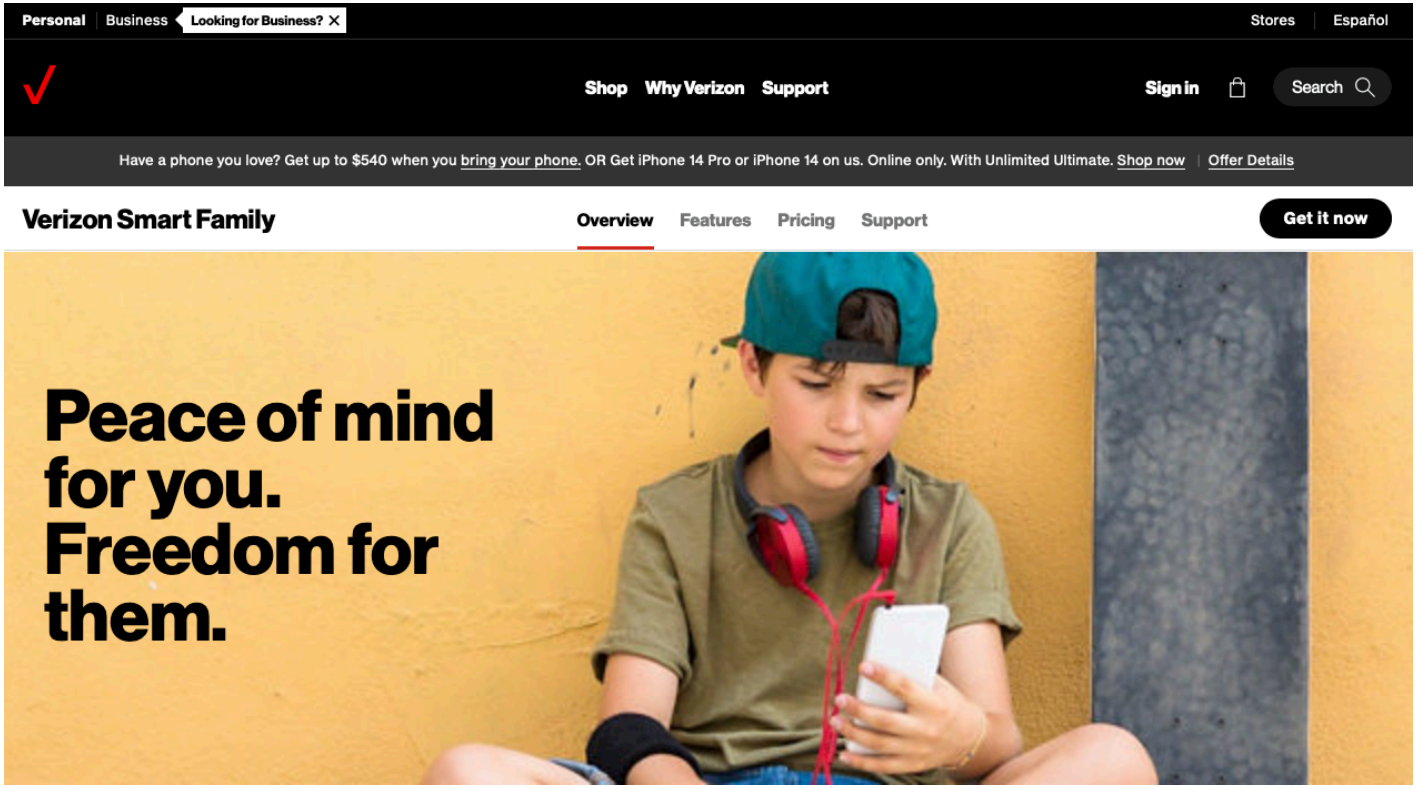
Claim	Public Documentation
11. The wireless end-user device of claim 1, wherein the plurality of network types include three or more of 2G, 3G, 4G, home, roaming, and WiFi.	The Accused Instrumentalities comprise "[t]he wireless end-user device of claim 1, wherein the plurality of network types include three or more of 2G, 3G, 4G, home, roaming, and WiFi." *See*, for example, the disclosures identified for claim 1.
12. The wireless end-user device of claim 1, the one or more processors further configured to receive an update to at least a portion of the differential traffic control policy list from a network element.	The Accused Instrumentalities comprise "[t]he wireless end-user device of claim 1, the one or more processors further configured to receive an update to at least a portion of the differential traffic control policy list from a network element." *See*, for example, the disclosures identified for claim 1. As yet another example, the one or more processors are configured to receive portions of policies from a network element. *See, e.g.,* https://www.verizon.com/plans/:

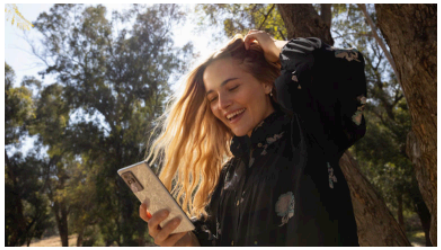
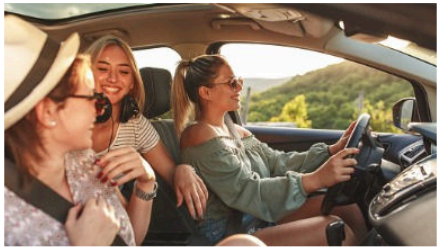
Claim	Public Documentation
	 ; https://www.verizon.com/business/products/plans/:

Claim	Public Documentation
	 ; https://www.verizon.com/support/knowledge-base-212894/:

Claim	Public Documentation
	Support › Apple › Apple iPhone 15 # Apple iPhone - Update Carrier Settings **NOTE** • Carrier settings updates are small files that are installed on iOS devices. The carrier settings include updates to Access Point Names (APNs), MMS settings, features like tethering and default apps. Having the most up to date carrier settings is recommended for the proper functionality of the device. • Apple® Watch® Series 3 users must be on Carrier Bundle 29.1 or higher (check on your iPhone® via **Settings › General › About › Carrier**). For more info on how to check carrier and / or update your Carrier version, refer to Updating Your Carrier Settings 1. From a Home screen on your **Settings** ⚙ **› General**. → If unavailable, swipe left to access the App Library. → If a carrier settings update is available, you're presented with an option to update. 2. Tap **About**. → If an update is available, an option appears to update. → To view the current carrier info, refer to View Carrier.

Claim	Public Documentation
	https://www.verizon.com/business/products/security/mobile-device-endpoint-security/mobile-device-management/mdm-device-enrollment-programs/:  https://www.verizon.com/solutions-and-services/add-ons/safety/verizon-smart-family:

Claim	Public Documentation
	

Claim	Public Documentation
	 **Block it Out** Keep certain apps and sites blocked until your kid is ready.  **Trusted contacts only** Make sure they're only texting and chatting with contacts you've approved. Learn more about setting Trusted Contacts by visiting: https://www.verizon.com/support/how-to-use-verizon-smart-family/  **Cut back screen time** Turn off the web during school hours, bedtime or dinner time so they can focus on what matters most.  **Know where they are** Location tracking keeps tabs on your child's phone and sends alerts when they arrive at their destination.  **Pick me up** Kids can request and share location with their parents.  **View their driving or passenger activity** Keep your mind at ease whether your kids are on the bus, carpooling or driving. ; https://www.verizon.com/support/knowledge-base-206963/; https://www.verizon.com/support/knowledge-base-152696/; https://www.verizon.com/support/verizon-smart-family-faqs/:

What Verizon Smart Family features are available without downloading the Verizon Smart Family Companion app on my child's device?

Certain features are only available if the Verizon Smart Family Companion app is installed on your child's smartphone and paired with the Verizon Smart Family app on your device.

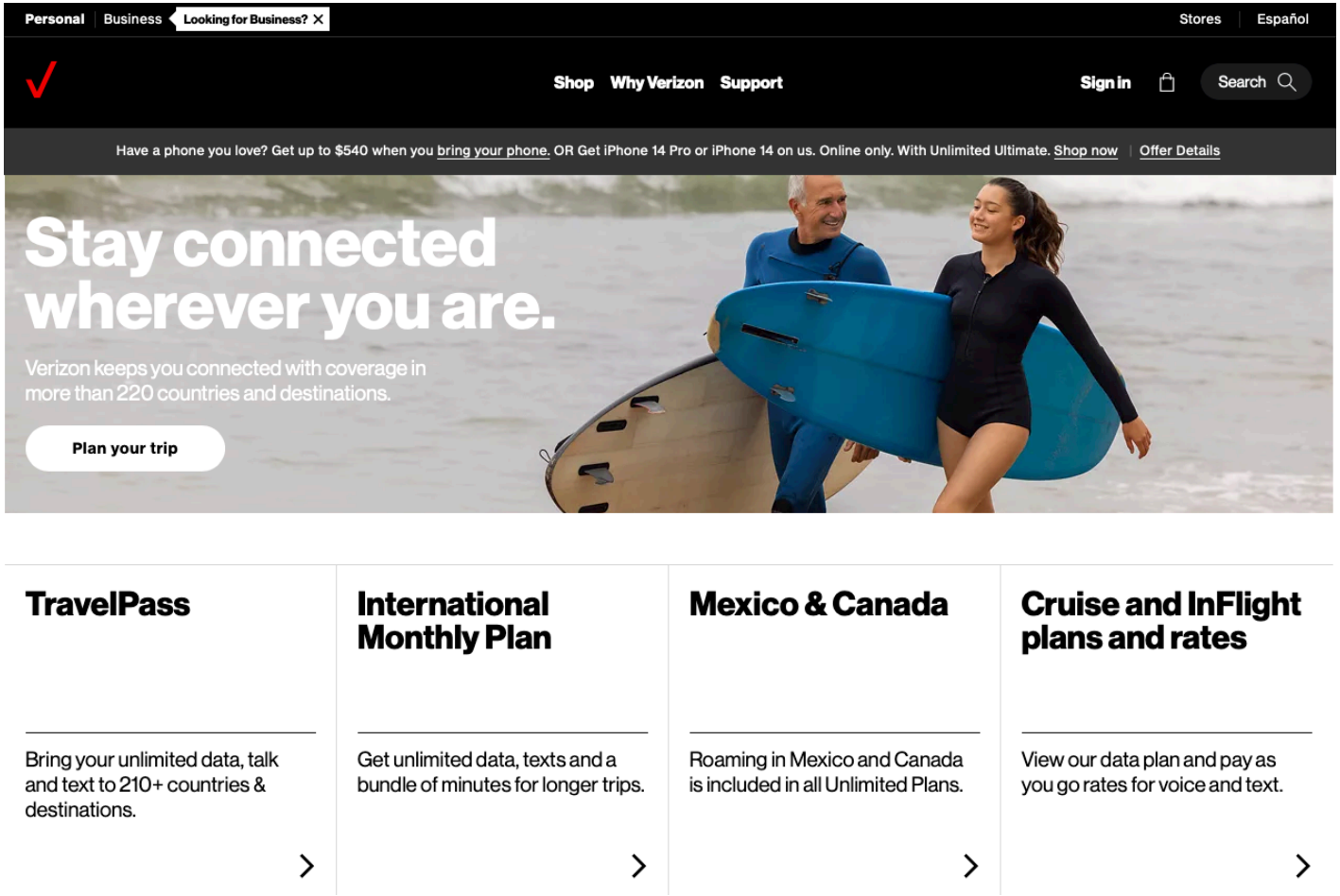
- **Without pairing, you can**:
  - View call and text activity
  - Set time restrictions on texts, calls and data usage*
  - Set data limits*
  - Set text, call and purchase limits
  - Get access to the device's network location

  Note: Network location accuracy may vary up to a few miles.

- **You must pair to**:
  - Set content filters
  - Monitor web and app activity
  - Pause internet access
  - Set time restrictions on Wi-Fi usage
  - Locate family members and set location alerts with the best location accuracy
  - Use the location check-in feature, where family members can send you their precise location when they arrive at their destination
  - Use the **Pick Me Up** feature that lets your child send a request for a ride to a parent line

;

Claim	Public Documentation
	; https://developer.android.com/about/versions/pie/android-9.0: **Data cost sensitivity in JobScheduler** Beginning in Android 9, `JobScheduler` can use network status signals provided by carriers to improve the handling of network-related jobs. Jobs can declare their estimated data size, signal prefetching, and specify detailed network requirements. `JobScheduler` then manages work according to the network status. For example, when the network signals that it is congested, `JobScheduler` might defer large network requests. When on an unmetered network, `JobScheduler` can run prefetch jobs to improve the user experience, such as by prefetching headlines. When adding jobs, make sure to use `setEstimatedNetworkBytes()`, `setPrefetch()`, and `setRequiredNetwork()` when appropriate to help `JobScheduler` handle the work properly. When your job executes, be sure to use the `Network` object returned by `JobParameters.getNetwork()`. Otherwise you'll implicitly use the device's default network which may not meet your requirements, causing unintended data usage. ; https://developer.android.com/training/basics/network-ops/reading-network-state; https://developer.android.com/training/connectivity/network-access-optimization; https://developer.android.com/reference/android/net/NetworkCapabilities.
13. The wireless end-user device of claim 1, wherein the plurality of network types include a roaming WWAN type and a home WWAN type, and the one or more processors are to apply the differential traffic control policy to one of but not both of the roaming WWAN type and the home WWAN type.	The Accused Instrumentalities comprise "[t]he wireless end-user device of claim 1, wherein the plurality of network types include a roaming WWAN type and a home WWAN type, and the one or more processors are to apply the differential traffic control policy to one of but not both of the roaming WWAN type and the home WWAN type." *See*, for example, the disclosures identified for claim 1. For further example, the policy can be based on roaming on a WWAN network. *See, e.g.,* https://www.verizon.com/plans/international/international-travel/

Claim	Public Documentation
	 https://www.verizon.com/support/international-travel-faqs/#ready-outside-us

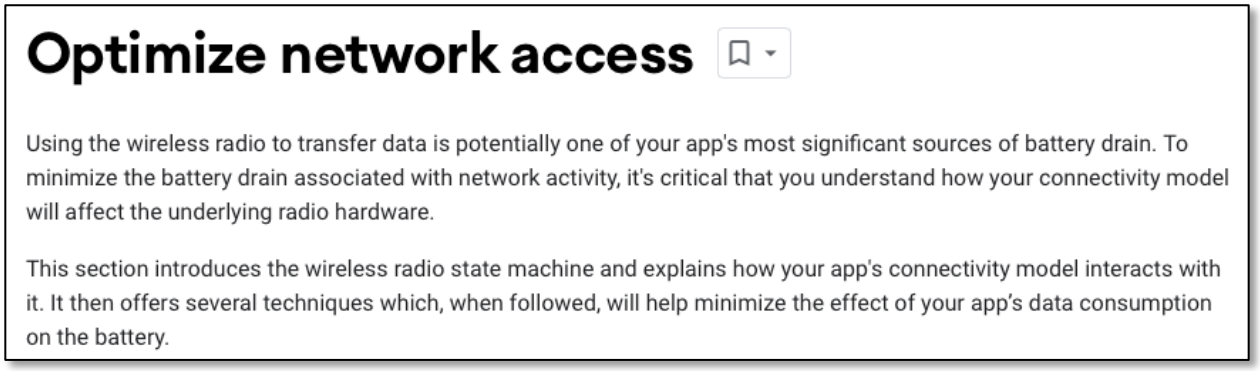
How do I get my device ready to use outside the US?

Before you travel internationally, make sure your device's roaming is turned on so your device can connect to cellular networks in your destination country.

To turn on roaming, start on your device's home screen:

Device	Steps
iPhone®	1. Tap **Settings** (the gear icon). 2. Tap **Cellular**, then tap **Cellular Data Options**, then **Roaming**. 3. Slide both the **Voice Roaming** and the **Data Roaming** selectors to Green (on). 4. Slide the **International CDMA** selector to off.
Motorola	1. Go to your Apps and tap **Settings** (the gear icon). 2. Tap **Network & Internet**, then **Mobile Network**, then **Data Roaming**. 3. Slide the **Data Roaming** selector to the right until it turns green. 4. "Allow data roaming?" appears. Choose **OK**. 5. Tap **Preferred network type**, then tap **Global**.
Android™	1. Go to your Apps, tap **Settings**, then tap **More**. 2. Tap **Mobile Networks** and then **Data Roaming access**. 3. Tap **Allow access for all trips** and **Set Network Mode to Global**.

Claim	Public Documentation
14. The wireless end-user device of claim 1, wherein the plurality of network types include the WWAN type and a WLAN type, and the one or more processors are to apply the differential traffic control policy to one of but not both of the WWAN type and the WLAN type.	The Accused Instrumentalities comprise "[t]he wireless end-user device of claim 1, wherein the plurality of network types include the WWAN type and a WLAN type, and the one or more processors are to apply the differential traffic control policy to one of but not both of the WWAN type and the WLAN type." *See*, for example, the disclosures identified for claim 1.
15. The wireless end-user device of claim 1, wherein the one or more processors are further configured to dynamically change the application of the differential traffic control policy based on a power state of the device.	The Accused Instrumentalities comprise "[t]he wireless end-user device of claim 1, wherein the one or more processors are further configured to dynamically change the application of the differential traffic control policy based on a power state of the device." *See*, for example, the disclosures identified for claim 1.
16. The wireless end-user device of claim 1, wherein the one or more processors are further configured to dynamically change the application of the differential traffic control policy based on a device usage state.	The Accused Instrumentalities comprise "[t]he wireless end-user device of claim 1, wherein the one or more processors are further configured to dynamically change the application of the differential traffic control policy based on a device usage state." *See*, for example, the disclosures identified for claim 1.
17. The wireless end-user device of claim 1, wherein the one or more processors are further configured to dynamically change the applica-	The Accused Instrumentalities comprise "[t]he wireless end-user device of claim 1, wherein the one or more processors are further configured to dynamically change the application of the differential traffic control policy based on power control state changes for one or more of the modems."

Claim	Public Documentation
tion of the differential traffic control policy based on power control state changes for one or more of the modems.	*See*, for example, the disclosures identified for claim 1. As a further example, the one or more processors change policies based on power control state changes of modems. *See, e.g.,* https://developer.android.com/training/connectivity/network-access-optimization.  **Optimize network access** Using the wireless radio to transfer data is potentially one of your app's most significant sources of battery drain. To minimize the battery drain associated with network activity, it's critical that you understand how your connectivity model will affect the underlying radio hardware. This section introduces the wireless radio state machine and explains how your app's connectivity model interacts with it. It then offers several techniques which, when followed, will help minimize the effect of your app's data consumption on the battery.

The radio state machine

The wireless radio on your user's device has built-in power-saving features that help minimize the amount of battery power it consumes. When fully active, the wireless radio consumes significant power, but when inactive or in standby, the radio consumes very little power.

One important factor to remember is that the radio cannot move from standby to fully active instantaneously. There is a latency period associated with "powering up" the radio. So the battery transitions from higher energy states to lower energy states slowly in order to conserve power when not in use while attempting to minimize the latency associated with "powering up" the radio.

The state machine for a typical 3G network radio consists of three energy states:

- **Full power**: Used when a connection is active, allowing the device to transfer data at its highest possible rate.
- **Low power**: An intermediate state that cuts battery power consumption by around 50%.
- **Standby**: The minimal power-consuming state during which no network connection is active.

While the low and standby states drain significantly less battery, they also introduce significant latency to network requests. Returning to full power from the low state takes around 1.5 seconds, and moving from standby to full power can take over 2 seconds.

To minimize latency, the state machine uses a delay to postpone the transition to lower energy states. Figure 1 uses AT&T's timings for a typical 3G radio.

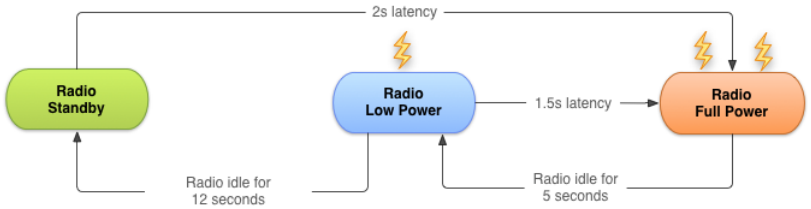


Figure 1. Typical 3G wireless radio state machine.

The radio state machine on each device, particularly the associated transition delay ("tail time") and startup latency, will vary based on the wireless radio technology employed (3G, LTE, 5G, and so on) and is defined and configured by the carrier network over which the device is operating.

This page describes a representative state machine for a typical 3G wireless radio, based on data provided by AT&T. However, the general principles and resulting best practices are applicable for all wireless radio implementations.

This approach is particularly effective for typical mobile web browsing as it prevents unwelcome latency while users browse the web. The relatively low tail-time also ensures that once a browsing session has finished, the radio can move to a lower energy state.

Unfortunately, this approach can lead to inefficient apps on modern smartphone operating systems like Android, where apps run both in the foreground (where latency is important) and in the background (where battery life should be prioritized).

How apps impact the radio state machine

Every time you create a new network connection, the radio transitions to the full power state. In the case of the typical 3G radio state machine described earlier, it will remain at full power for the duration of your transfer—plus an additional 5 seconds of tail time—followed by 12 seconds at the low energy state. So for a typical 3G device, every data transfer session will cause the radio to draw energy for at least 18 seconds.

In practice, this means that an app which makes a one second data transfer, three times a minute, will keep the wireless radio perpetually active, moving it back to high power just as it is entering standby mode.

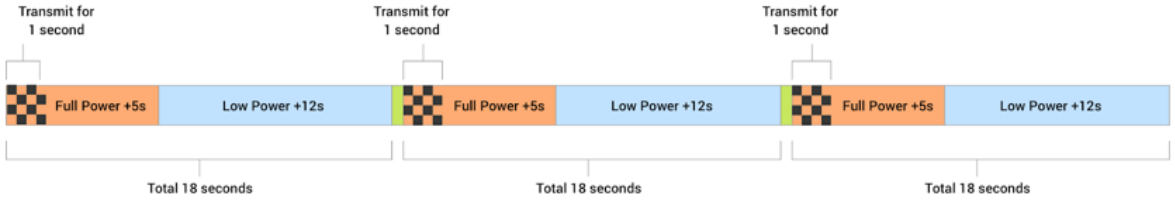


Figure 2. Relative wireless radio power use for one-second transfer running three times every minute. Figure excludes "power up" latency between runs.

By comparison, if the same app bundled its data transfers, running a single three-second transfer every minute, this would keep the radio in the high-power state for a total of only 20 seconds each minute. This would allow the radio to be on standby for 40 seconds of every minute, resulting in a significant reduction in battery consumption.

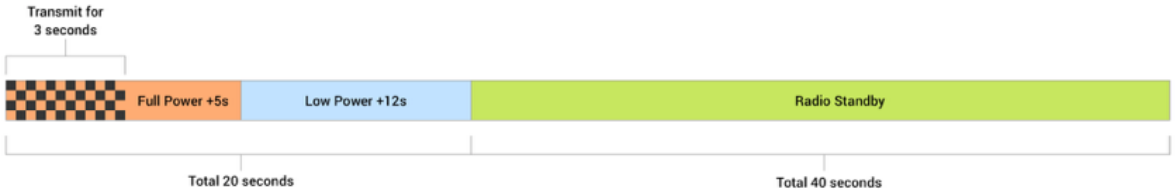


Figure 3. Relative wireless radio power use for three second transfers running once every minute.

Optimization techniques

Now that you understand how network access affects battery life, let's talk about a few things that you can do to help reduce battery drain, while also providing a fast and fluid user experience.

Bundle data transfers

As stated in the previous section, bundling your data transfers so that you're transferring more data less often is one of the best ways to improve battery efficiency.

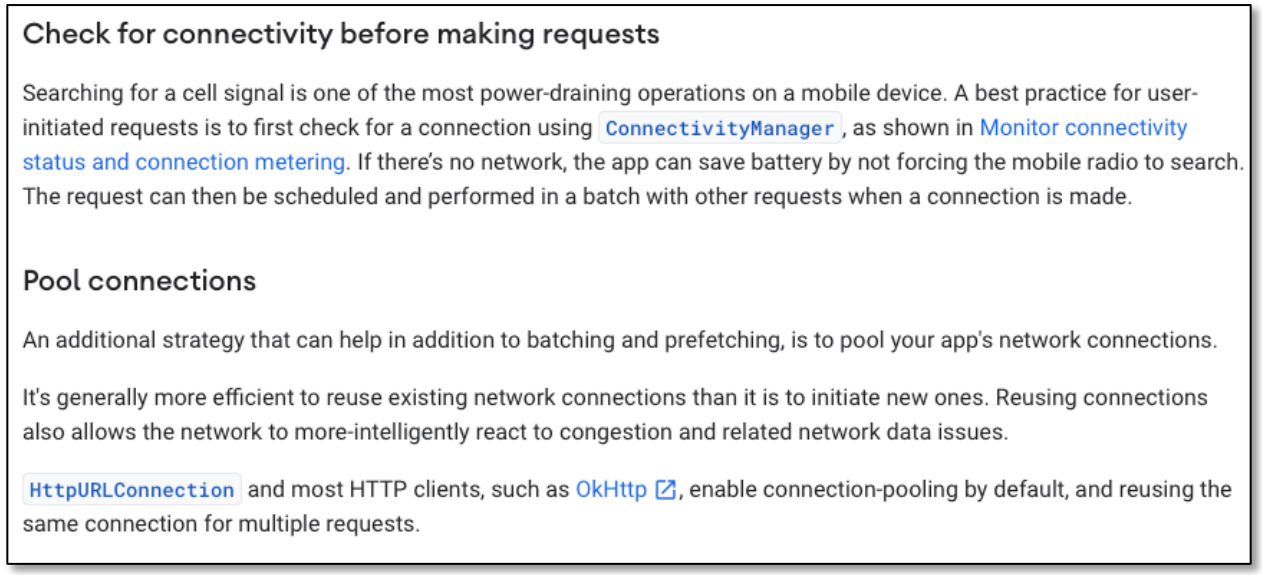
Of course, this is not always possible to do if your app needs to receive or send data immediately in response to a user action. You can mitigate this by anticipating and prefetching data. Other scenarios, such as sending logs or analytics to a server and other, non-urgent, app-initiated data transfers, lend themselves very well to batching and bundling. See Optimizing app-initiated tasks for tips on scheduling background network transfers.

Prefetch data

Prefetching data is another effective way to reduce the number of independent data transfer sessions that your app runs. With prefetching, when the user performs an action in your app, the app anticipates which data will most likely be needed for the next series of user actions and fetches that data in a single burst, over a single connection, at full capacity.

By front-loading your transfers, you reduce the number of radio activations required to download the data. As a result, you not only conserve battery life, but also improve the latency, lower the required bandwidth, and reduce download times.

Prefetching also provides an improved user experience by minimizing in-app latency caused by waiting for downloads to complete before performing an action or viewing data.

Claim	Public Documentation
	
18. The wireless end-user device of claim 1, wherein the differential traffic control policy defines that the first one or more applications can only access a first one of the network types during particular time windows.	The Accused Instrumentalities comprise "[t]he wireless end-user device of claim 1, wherein the differential traffic control policy defines that the first one or more applications can only access a first one of the network types during particular time windows." *See*, for example, the disclosures identified for claim 1.
19. The wireless end-user device of claim 1, wherein the one or more processors are configured to classify that the particular application is interacting with the user in the device user interface foreground based on a state of user interface priority for the application.	The Accused Instrumentalities comprise "[t]he wireless end-user device of claim 1, wherein the one or more processors are configured to classify that the particular application is interacting with the user in the device user interface foreground based on a state of user interface priority for the application." *See*, for example, the disclosures identified for claim 1.

Claim	Public Documentation
20. The wireless end-user device of claim 1, wherein the second one or more applications are not subject to a differential network access control that is applicable to the first one or more applications.	The Accused Instrumentalities comprise "[t]he wireless end-user device of claim 1, wherein the second one or more applications are not subject to a differential network access control that is applicable to the first one or more applications." *See*, for example, the disclosures identified for claim 1.
21. The wireless end-user device of claim 1, wherein the one or more processors are further configured to classify between: user applications; system applications, utilities, functions, or processes; and operating system application, utilities, functions, or processes.	The Accused Instrumentalities comprise "[t]he wireless end-user device of claim 1, wherein the one or more processors are further configured to classify between: user applications; system applications, utilities, functions, or processes; and operating system application, utilities, functions, or processes." *See*, for example, the disclosures identified for claim 1.
22. The wireless end-user device of claim 1, wherein the second one or more applications or services comprises foreground services.	The Accused Instrumentalities comprise "[t]he wireless end-user device of claim 1, wherein the second one or more applications or services comprises foreground services." *See*, for example, the disclosures identified for claim 1.
23. The wireless end-user device of claim 1, wherein selectively deny comprises intermittently block when the one or more Internet service activities are requested during selected time windows.	The Accused Instrumentalities comprise "[t]he wireless end-user device of claim 1, wherein selectively deny comprises intermittently block when the one or more Internet service activities are requested during selected time windows." *See*, for example, the disclosures identified for claim 1.
24. The wireless end-user device of claim 1, wherein the one or more processors are configured to pre-	The Accused Instrumentalities comprise "[t]he wireless end-user device of claim 1, wherein the one or more processors are configured to prevent the first one or more applications from changing the power state of at least one of the modems, and to not prevent the second one or more applications from changing the power state of the same modem or modems."

Claim	Public Documentation
vent the first one or more applications from changing the power state of at least one of the modems, and to not prevent the second one or more applications from changing the power state of the same modem or modems.	*See*, for example, the disclosures identified for claims 1 and 17.